Public Health Administration in North Carolina

His Excellency, Clyde R. Hoey
Governor of North Carolina

Public Health Administration in North Carolina

BY

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AND

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WITH

A Foreword

BY

CARL V. REYNOLDS, M.D.

State Health Officer and Executive-Secretary
North Carolina State Board of Health

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FOREWORD

This report on Public Health Administration in North Carolina, compiled by Dr. William A. McIntosh and Dr. John F. Kendrick, representatives of the International Health Division of The Rockefeller Foundation, sets forth the results of the most comprehensive study of its kind ever undertaken and successfully accomplished in North Carolina.

Through months of painstaking study, which led the authors of this valuable contribution through a veritable labyrinth of research, we have, in this publication, an accurate picture of the organization of and the services rendered by those who are engaged in carrying on our public health activities.

The strength of this important document lies not only in the amount of intelligent effort expended in its preparation and its clear presentation of facts, but also in the constructive manner in which the authors have undertaken to make recommendations for a still greater public health structure in North Carolina.

When I requested that this survey be made, I wanted to get an accurate, fair and impartial appraisal of just what is being done in our State. This desire has been realized, and I commend this report for study to those who believe in basing their objectives upon a desire for truth. No institution is so perfect that it cannot be improved; perfection can only be approximated by the finite mind, but the more accurately and impartially we appraise human effort, whether exercised by the individual or by society in the aggregate, the more nearly we will be drawn to a realization of the best.

I not only commend the fine work of Dr. McIntosh and Dr. Kendrick for the valuable contribution they have made to the annals of North Carolina, but I also thank The Rockefeller Foundation for the services of these two eminent authorities, and for its invaluable support of the cause of public health in general, both in America and throughout the world.

CARL V. REYNOLDS, M.D.,
Secretary and State Health Officer.

LETTER OF TRANSMITTAL

December 8, 1939

Dear Doctor Reynolds:

We take pleasure in transmitting herewith our report on the organization and administration of state and local health services in North Carolina. Its submission completes the task to which we were assigned.

We wish to express our appreciation of the opportunity afforded us to make this study and of the invaluable assistance which was given by you and your staff.

Respectfully submitted,

W. A. McINTOSH
J. F. KENDRICK

PUBLIC HEALTH ADMINISTRATION IN NORTH CAROLINA

General Introduction
To
Parts I and II

A fact-finding investigation of the organization and services of State and local health departments in North Carolina, undertaken on October 28, 1937, by representatives of the International Health Division of The Rockefeller Foundation at the request of the State Health Officer, has recently been completed. Request for this survey was made with two purposes in view: (1) the assemblage, by an agent disinterested politically, of information that would give a composite picture of the present status of State and local health administration in North Carolina in its relationship to government in general and to closely allied government agencies engaged in rendering health services; and (2) the formulation of such recommendations as may be appropriate for the consideration of the State Health Officer in the planning of the future health program. On the completion of the study the following report was prepared, in which there is presented, first, an exposition of the North Carolina plan of State and local health services (Part I) and, second, recommendations and comments (Part II).

PUBLIC HEALTH ADMINISTRATION IN NORTH CAROLINA

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PART II

Recommendations with Comments

ILLUSTRATIONS

ERRATA

Page 21, Date in line 12 of paragraph on General Administration should be 1937-38 instead of 1936-38.

Page 48, The italic headings *Pneumonia* and *Tuberculosis* should be numbered thus:

1) *Pneumonia*

2) *Tuberculosis*

Page 86, (b) should be omitted before heading "Provisions for Improvement of Obstetrical Practices."

Page 97, The line just above table at bottom of page, beginning "Laboratory of Hygiene," should read, "Laboratory of Hygiene for the past *four* bienniums were:"

Page 137, Quotation marks should be at end of fifth paragraph, which ends with the word *agencies.*

Page 144, The heading, "Comment on A," should be "Comment on a."

Page 146, The heading, "Comment on B," should be "Comment on b."

Page 159, In lines 10 and 11 under "Comment," the phrase, "that is, in accordance with those of local health departments," should be omitted.

Page 171, A heading reading "16. RECOMMENDATION PERTAINING TO GROUP RESEARCH" should be just over paragraph beginning "16. That . . ." at bottom of page.

Page 173, A heading reading "18. RECOMMENDATION PERTAINING TO OPERATING MANUAL" should be just over the paragraph beginning "18. That . . ." at top of page.

PUBLIC HEALTH ADMINISTRATION IN NORTH CAROLINA

PART I

ORGANIZATION AND SERVICES

A. INTRODUCTION

Part I of this study is divided into two main subdivisions, namely: (a) the North Carolina plan of State and local health services, and (b) miscellaneous considerations, including references to allied services. Of these main subdivisions, the former is an exposition of the present organization and services of the State and local health organizations; whereas the latter furnishes certain essential background information that helps to complete the picture of the conditions under which health work is done, and of other governmental or private agencies that contribute to the promotion of health.

This study was made for the benefit of the State Health Officer and his staff. For purposes of exposition, the State health organization, as well as local health organization, is viewed as consisting of: (1) the control agency —the board of health—and (2) the operating or executive agency of this board—the department of health. In dealing with these branches of the health organization, and with such subdivisions of them as may exist, a brief historical introduction has been presented of each, and, in order to show the relationship of the State organization to its local counterparts, descriptions of these organizations have been presented, where practicable, in parallel columns.

Considerable detail was included in order that the study may be utilized as a ready reference work and as an aid in the preparation of an operating manual, referred to hereafter. Part I served as an indespensible prerequisite to Part II, in which recommendations are enumerated.

B. THE NORTH CAROLINA PLAN OF STATE AND LOCAL HEALTH SERVICES

1. Boards of Health

On February 12, 1877, the General Assembly of North Carolina enacted legislation which provided that the State Medical Society act as a State Board of Health, and the Society established a Health Committee to discharge its public health responsibilities. In 1879 the Legislature created a State Board of Health consisting of nine members. The Governor was authorized to appoint six members and the State Medical Society three members. In 1893 the General Assembly decreased the Governor's appointments to five members and increased the State Medical Society's to four. No modification in the laws pertaining to the State Board of Health has been made since 1931.

County boards of health were created by the State Legislature in 1879. The membership of these boards was made up of all regular practicing physicians in the county, the chairman of the board of county commissioners, the mayor of the county town and the county surveyor. In 1901 the General

Assembly created county sanitary committees composed of the county commissioners and two physicians elected by the county commissioners. These committees were discontinued in 1911, when the Legislature provided for county boards of health as they exist today, though it was not until 1931 that the membership of these boards was enlarged to include a dentist. Four special charters have been enacted by the General Assembly to provide for city and county boards of health and the manner in which these boards are set up varies for each charter.

The transition in administering county health work from a part-time to a whole-time basis occurred in 1911. This change was favorably influenced by the campaign against hookworm disease which was begun in North Carolina in 1910. The first full-time county health officer to be appoined in North Carolina was Dr. G. M. Ross, who was made health officer of Guilford County on June 1, 1911. Attention should be called also to an enabling act passed by the General Assembly in 1935 for the purpose of authorizing the State Board of Health to use any available funds, not otherwise appropriated, for the establishment of local or district health departments for any town, city, and county or groups of such units in the state where the local governing powers desire the formation of such a department and are willing to support such enterprises financially in an amount at least equal to the state's financial participation.

Present Organizations.—Nine members compose the State Board of Health, five of whom are appointed by the Governor and four are selected by the State Medical Society. Specific eligibility standards are not laid down by law, but custom limits the Governor's appointments to two physicians, an engineer, a dentist, and a pharmacist; whereas, the State Medical Society elects four physicians. Retiring members are eligible to succeed themselves. The term of office is four years, and groups of four and five members retire in rotation on successive odd years. The appointive power may remove members from office for cause and may fill vacancies which occur for the unexpired term. The election of officers of the State Board of Health is provided by law. The President is chosen from the membership of the Board, but the Secretary-Treasurer cannot be a Board member. Legal provision is made for an annual regular meeting to be held cojointly with the State Medical Society Meeting, and for holding special meetings on call. Minutes of meetings are kept. Members of the Board receive as compensation $4.00 a day and necessary travel expenses when on actual duty in the state. Only travel expenses for one delegate and the Secretary-Treasurer are allowed for attendance at important meetings outside the State. The President signs requisitions for payment of legally authorized expenses of the Board members. Provision is made for an Executive Committee, composed of the President and two other members, and this Committee has such authority as may be assigned to it by the Board to act upon matters which arise between meetings, but actions taken by it are presented for confirmation at the succeeding Board meeting. Meetings of this Committee are called by the Secretary-Treasurer with the approval of the President. The Executive office of the State Board of Health is in Raleigh.

MEMBERS OF THE STATE BOARD OF HEALTH

G. G. Dixon, M.D., H. Lee Large, M.D., H. G. Baity, Sc.D., W. T. Rainey, M.D., S. D. Craig, M.D., President, J. N. Johnson, D.D.S., Vice-President, Hubert B. Haywood, M.D., John Labruce Ward, M.D., C. C. Fordham, Jr., Ph.G.

Six members compose the county board of health, namely, the chairman of the board of county commissioners, the mayor of the county town (or the clerk of the superior court when the office of mayor does not exist), the county superintendent of schools, two physicians, and a dentist. The ex officio members elect the other members (unless a special legislative enactment for a health district provides otherwise). Board members are eligible to succeed themselves. The term of office is two years for the elected members of the county boards of health and terminates on the first Monday of January of odd years. No specific provision is made in the law for removing members or for filling vacancies which may occur. The county commissioner is chairman of the county board of health, and it is customary for the county superintendent of schools to serve as secretary of the board. Meetings of the county boards of health are provided for by law. It is required that one of these shall occur annually in the county town. During the year, meetings may be called by the health officer or scheduled at monthly or quarterly intervals; and three members of the board are authorized to call meetings when, in their opinion, the public health of the county requires the board to convene. The presence of three members constitutes a quorum. Minutes of meetings held are kept in most instances. The seat of the executive office of county boards is not specified in the law, but it is customary to select the county town. There is no legal authorization for the compensation of county board members for the services they render, but these members receive a flat rate of $3.00 to $4.00 for attending meetings. An executive committee of county boards of health is not provided for by statute. Where there are wholetime district health departments, the boards of health of each local health jurisdiction, which collectively compose the district unit, continue to function within their respective jurisdictions, but a district executive committee may be formed, consisting of a representative of each county health board and of the State Health Officer or his official representative, to effect the cooperation of these persons in behalf of matters common to the district as a whole, or of an intercounty nature. Cities within the district may or may not be represented on the committee. This committee, having no legal standing and therefore no authority in itself, makes recommendations for the individual consideration and action of the several local health boards represented.

Duties, Functions, and Responsibilities.—Numerous duties are assigned by law to the State Board of Health and county boards of health, the general character of which may be comprehended by the following considerations:

The State Board of Health is: (a) to take cognizance of the health of the people; (b) to make investigations and inquiries pertaining to sanitary matters, to causes of diseases dangerous to public health, to sources of morbidity, and to the effect of locality, employment, and conditions upon the public health; (c) to gather and disseminate public health information; (d) to serve as sanitary advisors to the State with respect to location, sanitary construction, and management of all State institutions, and with respect to directing the attention of the State to sanitary matters that affect the industries, prosperity, health, and lives of the people of the State; (e) to enact and enforce regulations deemed necessary for the protection of public health, to

declare what diseases are preventable, and to adopt rules covering requirements for the control of such diseases; (f) to make certain appointments, such as that of the State Health Officer, with approval of the Governor, and of experts to carry out investigations; and (g) to have control and supervision of divisions and services of the state health organization which have been set up under its authority or established directly by law and assigned to the State Board of Health for administration.

The County Board of Health is: (a) to have immediate care and responsibility of the health interests of the county; (b) to make rules and regulations for the protection and advancement of public health and to adopt additional rules and regulations to those of the State Board of Health pertaining to the control of communicable diseases; (c) to elect either a county physician or a county health officer biennally (or in lieu of the latter, a county quarantine officer), subject to qualification standards established by the State Board of Health for county (or district) health officers of counties (or districts) receiving State aid; (d) to pay fees and salaries, except that such expenditures must be approved by the county commissioners; and (e) to exercise certain minor judicial functions.

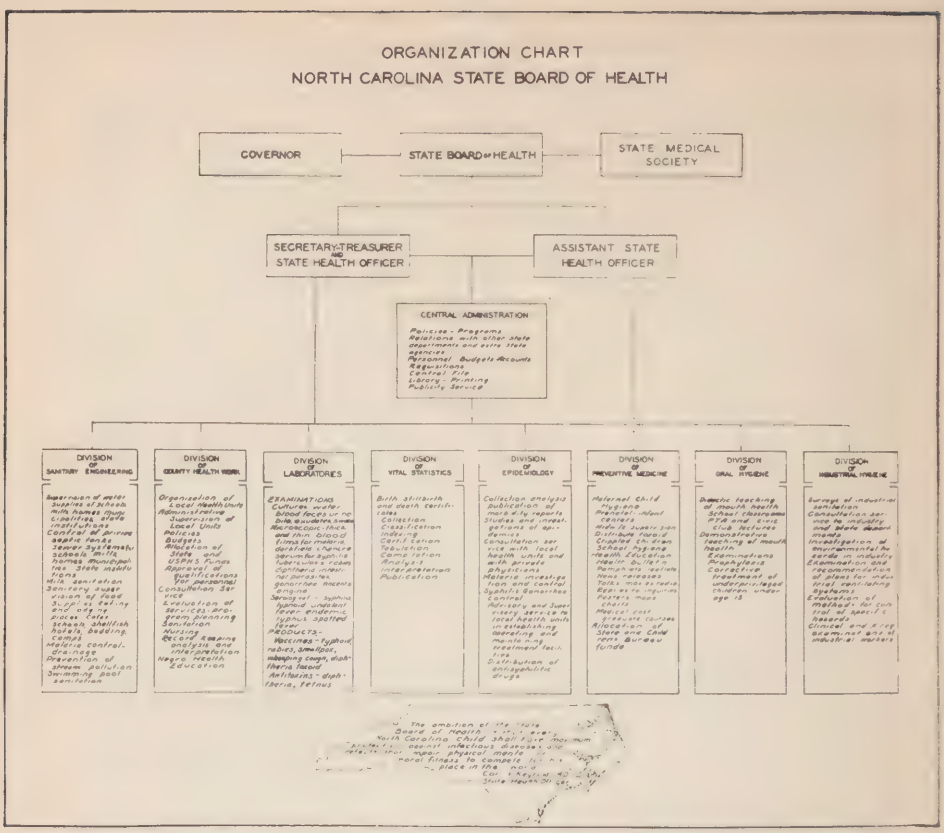
2. Departments of Health

In North Carolina the term "State Board of Health" from a strictly legal viewpoint embraces the Board proper and all operating agencies such as divisions and bureaus which have been organized as a part of the administrative unit of the State Board of Health. The county board of health would appear also to consist of the members of the board and its operating staff. For purposes of exposition, however, it is convenient to conceive of the State and county health organizations as consisting of the Board of Health and a Department of Health. The Department of Health is the operating staff broken down, in the case of the State, into subdivisions such as divisions and bureaus, but undifferentiated in the case of county health departments.

The standard whole-time county health department in North Carolina consists of a health officer, two public health nurses, a sanitary officer, and a secretary. There is also provision for an oral hygiene program, usually coordinated with the state division of oral hygiene. In a district health department, at least one nurse and also a clerk is engaged for each county, and there may be more than one sanitary officer employed. These employees serve under the direction of the district health officer.

Except for the State Laboratory of Hygiene, the State Department of Health is housed in a large building situated on Caswell Square, Raleigh. The Laboratory, now located in another part of Raleigh, is soon to be replaced by a new building which will be erected immediately adjacent to the Health Building.

Locally, boards of county commissioners make available, rent free, suitable space at the county seat, usually not less than three rooms, for use as headquarters of the staff of the county health department. The board of county commissioners for each of the counties comprising a health district make available, rent free, suitable office space and office equipment in each



STATE BOARD OF HEALTH, ADMINISTRATION BUILDING

county-seat town for use as headquarters of the personnel of the district health department.

a. GENERAL ADMINISTRATION

With respect to the State Health Department, matters of general administration are handled by the Central Administrative Office. The scope of this Division's services pertain to the following matters: policies, programs, relations with other State departments and extra-State agencies, personnel, budgets, accounts, requisitions, library, printing, and publicity. The personnel of the Central Administrative Office consists of nine employees, namely, (a) the State Health Officer and his secretary; (b) the principal accounting clerk and two assistants; (c) two filing clerks (librarians); (d) publicity specialists; and (e) a janitor-messenger. The total budget for the Central Administrative Office for the fiscal year 1937-38 was $39,355, of which the State appropriated $26,433 and the U. S. Public Health Service contributed $12,922. The entire budget of the State Board of Health for 1936-38 amounted to $1,242,999, of which $1,084,372 was expended. An itemized statement of these expenditures will be found in Table 1 of the accompanying Appendix.

With respect to whole-time county and district health departments, matters of general administration are discharged by the county or district health officer and his secretary, working in cooperation with the staff of the State Division of County Health Work. The budgets of these local health departments are not itemized to show specific allocations for these general administrative services. At present (June 30, 1938) there are forty county health officers and nine whole-time district health officers, having jurisdiction over sixty-seven counties in the State, serving a population of about 2,408,430. There are also five full-time assistant health officers employed in district and county health departments.

1) *State Health Officer.*[1]—The State Health Officer, who must be a registered physician of North Carolina, is elected by the State Board of Health subject to the approval of the Governor and may be removed from office by the Board for cause. His term of office is four years, and he serves on a whole-time basis. His residence must be in Raleigh. The compensation of the State Health Officer consists of an annual salary, which is fixed within legal limits by the Board, and actual travel expenses. Provision is made by the Board for an Assistant State Health Officer, and when the State Health Officer and his assistant are absent from Raleigh, one of the directors of a division of the State Health Department is designated as acting head.

The many responsibilities of the State Health Officer embrace those duties assigned specifically by law and those bestowed upon him by virtue of his

[1] During the past sixty-one years that the State Board of Health has been in operation, there have been six state health officers, as follows:
Dr. Thomas F. Wood (1879-1892)
Dr. Richard H. Lewis (1892-1909)
Dr. W. S. Rankin (1909-1925)
Dr. Charles O'H Laughinghouse (1926-1930)
Dr. James M. Parrott (1931-1934)
Dr. Carl Vernon Reynolds (1934-)
Dr. G. M. Cooper served as Acting State Health Officer in 1923-24, in 1925-26, and in 1934. This position was also held by Dr. H. A. Taylor in 1930-31.

NORTH CAROLINA STATE HEALTH OFFICERS 1879-1939

Dr. Thomas F. Wood (1879-1892), Dr. Richard H. Lewis (1892-1909), Dr. W. R. Rankin (1909-1925), Dr. Charles O'H. Laughinghouse (1926-1930), Dr. James M. Parrott (1931-1934), Dr. Carl Vernon Reynolds (1934-).

position as Executive Officer of the State Board of Health. In general he is responsible for administrative leadership with respect to the formulation and execution of an effective health program, subject to the control of the State Board of Health.

2) *County and District Health Officers.*—The county health officer is elected by the county board of health or appointed by the Secretary of the State Board of Health if the county board fails to act. Qualification standards are not specified in the law when these officers are elected by the county board, but when appointed by the State Health Officer, choice is limited to registered physicians in good standing in the county; when the State Board of Health contributes financially toward a whole-time county health department, the terms of the contract entered into specify qualification standards for the county health officer, namely: (1) that he be a reputable physician, holding a degree of Doctor of Medicine from a Grade A Medical School and having a license to practice medicine in North Carolina; (2) that he be a man of good moral character, without objectionable habits; and (3) that he be experienced or trained in public health administration as evidenced by at least two years of experience in public health administration satisfactory to the State Board of Health, or by holding a certificate from an approved training school for health officers. The term of office for the county health officer is two years, subject to the proviso that the tenure of his service is terminable at the pleasure of the county board of health. The county health officer works on a full-time basis. The county board of health is authorized to pay such salary as may be necessary to protect and advance the public health, and the State Health Officer, when the appointment is made by him, is empowered to fix the compensation of the county health officer, having in view the amount of taxes collected and the compensation paid by other counties for similar services.

The manner in which a full-time district health officer is employed is not specifically provided for in the law which authorizes the establishment of district health departments; in practice, presumably, the appointment is made individually by the several local boards of health which operate within the district health jurisdiction concerned. Neither county nor district health officers serve locally as deputy State health officers, but local sanitary officers may be made agents of the State Board of Health; furthermore, if the board of health of a city health jurisdiction, situated within a whole-time county or district does not appoint a health officer, the county or district health officer automatically becomes the city health officer; the city board of health may elect the county or district health officer as city health officer, but this procedure is unnecessary.

For the unorganized counties of the State, legal provision is made for the county Board of health to elect a county physician and a county quarantine officer, and to fill vacancies occurring in these offices. In the event local boards fail to act, the State Health Officer is empowered to assume such responsibility. These officials serve on a part-time basis; the term of office for the county physician is two years and for the county quarantine officer, four years. In organized district health departments, the position of county physician is retained, whereas, that of county quarantine officer is abolished; the county

STATE HEALTH OFFICER AND DIRECTORS OF THE DIVISIONS OF THE STATE HEALTH DEPARTMENT

physicians are not administratively responsible to the district health officer. In organized counties, both positions are abolished, but provision is made for the employment of a physician on terms approved by the board of county commissioners to render the services of a county physician. Such a physician is usually engaged on a part-time basis but may be employed full-time when he is assigned additional responsibilities such as medical examination of school children. The presumption is that these full-time physicians are administratively responsible to the health officer.

An insight into the administrative responsibilities of the county health officer may be obtained from the following incomplete listing of duties which are assigned to him by law: (1) To perform the duties of the county physician and quarantine officer, i.e., (a) to make medico-legal postmortem examinations for coroners' inquests; (b) to make examinations of the mentally ill for commitment; (c) upon the request of proper authorities, to render professional service to the sick inmates of convict camps, jails, and county homes or to employ a physician to render these services on terms approved by the board of county commissioners, except that the medical services for convict camps are now performed by the State prison system; and (d) to enforce all laws pertaining to inland quarantine and rules and regulations covering such matters. (2) To make sanitary inspections of public school buildings and grounds. (3) To examine school children who have been screened by teachers of the school system for his consideration; to endeavor to examine feces of school children whom he suspects of having hookworm disease; and to carry out prescribed procedures designed to obtain corrections and treatments of school children through the cooperation of parents or guardians. (4) To cooperate with the school system to the end that school

children may be better informed with regard to the importance of health and the methods of preventing disease. (5) To conduct an educational program through the agency of the press, public addresses, etc. for the purpose of obtaining the cooperation of the public in the adoption of measures for the greater conservation of life. (6) To carry out procedures under the provisions of the law for the abatement of nuisances dangerous to public health; and (7) to serve in the capacity of a local registrar of vital statistics when designated to do so by the State Board of Health.

The whole-time district health officer has the authority delegated to town, city, or county health officers and to town, city, or county quarantine officers in each of the several units comprising the district over which he has supervision, except that his appointment does not affect in any way the election of a county physician in counties comprising the district health department.

3) *Employment and Administration of Personnel.*

STATE

Positions on the staff of the State Health Department are listed, together with compensations approved, in the biennial budget of the State Board of Health. Within the scope of the budget the technical procedures relating to the employment of personnel is carried out by the State Health Officer, except that such appointments must be passed upon by the Director of the State Budget Bureau before becoming affective. Key positions, such as directors of divisions, are filled by the State Health Officer, and subordinate positions within the divisions are filled upon the recommendation of the director concerned and the approval of the State Health Officer. Due diligence is given to finding the best qualified person for the position at the compensation available, and the recommendations of the Conference of State and Territorial Health Officers, pertaining[1] to qualification standards, are followed as a guide. Qualification standards for staff positions are not, however, set up in the law, nor are Civil Service regulations in effect in North Carolina.

The appointive authority exercises the right to discharge employees when such action becomes necessary.

At the beginning of each fiscal year a list of the employees of the State Health Department, together with the compensation each receives, is certified to the State Budget Bu-

COUNTY OR DISTRICT

Positions on the staff of the whole-time county or district health departments are listed, together with compensation approved, in the annual budget set up for these local districts. According to the contract entered into between the State Health Department and local boards of health, the county or district health officer has sole authority to employ, direct, and replace subordinate members of his staff, it being understood that he is to engage only qualified field personnel who meet the requirements as outlined in the State Board of Health's policies for the allocation of State funds, i.e., at least two years' experience satisfactory to the State Board of Health in public health nursing or sanitation work, unless the public health nurse or sanitary officer has had adequate training in, or holds a certificate from an approved training school. In the event that qualified personnel, more particularly the health officer, is not available, provisional arrangements may be made for engaging the services of other persons for a temporary period, but this arrangement is resorted to only infrequently and is limited to units in operation and is merely a measure to avoid interruption of service.

The personnel of local health departments receiving State aid is employed on a whole-time basis, except that physicians may be engaged on

[1] B-880a, June 17, 18, 19, 1935.

reau. Furthermore, when vacancies occur among employees during the year, this Bureau is notified when their services are discontinued.

Record-keeping of time on duty of the staff of the State Health Department is attended to by directors of divisions and reported monthly to the State Health Officer. The following provisions are made for time off duty annually with pay: (1) *vacation period*—12 working days (non-accumulative); (2) *sick leave*—10 working days (accumulative); (3) *petty leave*—2 working days (not to exceed 14 hours and non-accumulative); and (4) certain legal holidays as designated by the State.

Directors of the divisions of the State Health Department are under the administrative supervision of the State Health Officer, and staff members within these divisions are responsible to their respective chiefs. All members of the organization have the privilege of free access to the State Health Officer.

The following administrative procedures have been established by the State Health Officer pertaining to: (1) *external relationships of personnel*, namely, (a) that the itineraries of directors of divisions and of their subordinate field staff must be left in each division's office and a copy furnished the secretary of the State Health Officer; (b) that all contacts pertaining to official business between directors of divisions of the State Board of Health and their subordinates, with persons of other state health departments or Federal agencies, must be approved beforehand by the State Health Officer; (c) that all official communications between any division of the State Health Department and any agency outside the state must be approved by the State Health Officer as evidenced by his signature or by concluding the communication thus: "By direction of the State Health Officer"; and (d) that all applications for employment with the State Health Department, except those pertaining to directorships of divisions, must be transmitted to the directors of the divisions concerned. (2) *Internal relationships of staff*, namely, (a) that a classified list of a part-time basis to perform therapeutic duties assigned by law to local health officers, and all staff members must comply with the State Board of Health's policies pertaining to honesty, sobriety, and moral conduct.

Record-keeping of time on duty of the staff of the county or district health department is attended to by the county or district health officer through his clerk. The arrangement for vacation time, sick leave, and petty leave is the same as for the State Health Department. Provision is made for the notification of the State Health Officer whenever any such employee takes leave in excess of the amount allotted.

The administrative relationships existing between the State and the whole-time county or district departments of health are effected through the State Division of County Health Work. In this connection, the State Health Officer has established the following administrative procedures: (1) copies of all official communications of an administrative nature affecting local health departments shall be furnished the division of the State Health Department involved; (2) copies of all official correspondence between any division of the State Health Department and any individual or agency in the local health officer's jurisdiction shall be sent to the local health officer; (3) all correspondence from a local health unit to any division of the State Health Department shall be conducted by the local health officer except that an emergency order for supplies may be placed by a subordinate; (4) all correspondence from a local health officer requesting advice or information from any division of the State Health Department shall be sent to such division, and a copy to the Division of County Health Work; (5) all correspondence pertaining to matters of policies or finances by local health departments with agencies outside the State shall be referred to such agency by the State Division of County Health Work; (6) copies of reports on health conditions found in local health departments shall be supplied local health officers, the

State and local health employees, including addresses and telephone numbers be compiled and a copy supplied to each division's director; (b) that requests for the temporary services of an employee, outside the division to which the employee belongs, must be arranged by the directors concerned, or through the State Health Officer before contacting the employee desired; and (c) that official interdivisional communications be made in duplicate, a copy being sent to the director of the employee addressed.

As the need arises, staff conferences are called by the State Health Officer but these meetings are not convened at regular scheduled intervals.

director of the Division of County Health Work, the other divisions of the State Health Department affected; (7) when consideration is being given to the removal of an employee from a local health unit, the director of the State Division of County Health Work must be consulted first, then the local health officer, and finally, the employee who is to be offered the position; and (8) the local health officer shall be informed beforehand of any official visit to his territory of any employee of the State Board of Health, and such employee shall use the local health office as his headquarters during his stay.

Policies covering staff conferences have not been established for general application throughout local health departments, the holding of such meetings being left to the discretion of the local health officer. In Person-Orange-Chatham Health Department, for example, about six staff conferences are held annually.

4) *Financial Management.*—The transactions of the Finance Office of the State Health Department are discharged by the Principal Accounting Clerk and her assistants, who operate under the supervision of the State Health Officer. This office works in close cooperation with the divisions of the State Health Department and with other State departments and agencies concerned, namely, the State Budget Bureau, the State Auditor's Department, the Treasury Department, and the Division of Purchases and Contracts.

The Division of County Health Work of the State Health Department employs an accountant who has charge, under this Division's Director, of cooperative budgets set up jointly by the State and local boards of health,[1] covering the State's subsidies and those of the U. S. Public Health Service. During the fiscal year, July 1, 1937, to June 30, 1938, these subsidies amounted to $307,080, of which the State contributed $92,600 and the U. S. Public Health Service $214,480.[2] This Division, however, is not a clearing agency for all the financial transactions which the State Health Department carries on in local whole-time health jurisdictions. The Division of Preventive Medicine assigns nurses of its staff to certain whole-time health units and administers, through the office of the Principal Accounting Clerk, funds received by the State from the Children's Bureau, a part of which are used to subsidize services which are carried on under the direction of local full-time health officers. Separate budgets for each local health unit are set up for these nurses, but the aid from the Children's Bureau, which finances the obstetrical and pediatric services of local health departments, is included as a part of the general administrative budget of the Division of Preventive Medicine. For the fiscal year 1937-38 the budgeted expenses of local public health nurses, exclusive of the consultant nurse, who was subsidized from

[1] This accounting service was transferred to the central finance office on July 1, 1939.
[2] See section of this report on County Health Organization and Supervision.

funds of the Children's Bureau, amounted to $3,370, and the budgeted expense of the obstetrical and pediatric services was $20,000. The budgeted expenses of the eight nurses of the regular staff of the Division of Preventive Medicine amounted to $19,598, and that of the nursing consultant to $3,510, the former being appropriated by the State and the latter contributed by the Children's Bureau. Furthermore, certain other expenses for local health services, such as the subsidy by the Division of Epidemiology towards venereal disease control, does not appear in the budgets of local health departments; this item for venereal disease amounted to $23,680 and was a State appropriation. The $100,000 grant for syphilis made to the State Board of Health in 1937-38 by the Reynolds Foundation was increased to $160,000 for 1938-39 and is being used to promote syphilis control activities through local health departments. Furthermore, the State Board of Health's contribution to local oral hygiene services, administered through the Division of Oral Hygiene, was not shown in the budget of local health units. In this connection, it is interesting to note that the State's share of the local oral hygiene program's fund, as handled by the Division of County Health Work, is included in the funds matched by the State's funds administered by the Division of Oral Hygiene.

Within local whole-time county and district health departments, the local health officer with the aid of his clerk transacts the financial procedures of the local health department.

State

The budget: In the fall of even years the directors of the subdivisions of the State Board of Health prepare estimates of receipts, if any, and of expenditures for the ensuing biennial period. These estimates, itemized with respect to salaries, travel, and general expense, are presented to the Principal Accounting Clerk, who under the direction of the State Health Officer, assembles them for the consideration of the State Budget Bureau. The items in the budget estimates are classified according to "Purpose" (subdivisions of the State Board of Health) and "Objects" (salaries, travel, expenses, etc.). Actual expenditures during recent years are shown for items listed, together with estimates for the current year, and the amounts requested for each of the years of the ensuing biennium. Under the heading "Less: Estimated Receipts" there appears an itemization of anticipated revenues for vital statistics, laboratory of hygiene, bedding fund, and oral hygiene. Furthermore, the average number of employees is listed according to the subdivisions of the estimates by "Purpose" and these estimates are

County or District

The budget: The State Board of Health subsidizes whole-time district and county health departments on the basis of contracts entered into between the State Board of Health and these local health units. In general, the allocations of the State to counties are apportioned as follows (1) 25 per cent of the total official funds appropriated locally for five-piece units; (2) 20 per cent of the total for four-piece units; (3) 15 per cent of the total for three-piece units; and (4) 10 per cent of the total for two-piece units. An increase of 20 per cent of these percentages is provided for when the local departments are directed by health officers who have had satisfactory specialized training, except that the State's allocation ordinarily cannot exceed $1,440 per annum. Locally, counties, cities, towns, boards of education, trustees of special chartered school districts, etc. may appropriate funds towards the budgets of local health departments, including the amount contributed locally for oral hygiene, and the State Board of Health considers the total of such official funds in making its allocation. The basis of the

classified according to the following headings: Average annual Salary or Wage, Summary of Purpose, and Summary of Object.

After approval by the Executive Committee of the State Board of Health, the estimates are presented in December to the State Budget Bureau. The Director of the Budget adds a column in which appears his recommendations. These estimates are then printed as a section of the State budget for the consideration of the General Assembly, except that columns showing expenditures for recent years are limited to the current biennial period. The State Health Officer has an opportunity to appear before the Advisory Budget Commission and also the Appropriation Committee of the General Assembly for hearings on his estimates before the Legislature enacts the State Budget.

Each of the divisions of the State Health Department operates under itemized budgets. Provision is made whereby these intra-departmental budgets may be revised should the best interests of the work necessitate changes in the amount or character of the items.

State's allocation may be varied, however, with the approval of the Executive Committee of the State Board of Health, when an unusual and outstanding type of health service is being rendered by a county health department. Funds allocated to counties from other sources, such as Federal, and other non-local, are not included in the contract and are supplemental to official local and State appropriations.

The State Board of Health allocates funds to district health departments on such a basis as may be agreed upon by the State Board of Health and the contracting counties composing the official health district, except that the total allocation of the State Board of Health must be matched at least equally by the total allocation of the funds appropriated by these contracting parties.

To facilitate the preparation of annual budgets locally, local health officers are informed during each spring by the Director of the Division of County Health Work as to the amount of the State and U. S. Public Health Service allocations that may be expected for the ensuing year.

Annually, county and district health officers prepare budgets for their local health departments covering expenditures and income for the fiscal year beginning July 1. A special triplicate form supplied by the Division of County Health Work is used. Estimated expenditures are itemized according to code numbers under the following headings: Personal Service, Supplies, Other Expenses, and Equipment. Actual expenditures for the previous year and the estimated expenditures for the ensuing year are summarized under these main headings, and provision in the budget form is made for entering the contributions covering the income of the local health department, itemized as to sources, for the current year. One copy of this budget is retained by the local health department, one copy is sent to the State Health Department, and the third copy is transmitted to the county auditor. Some local health officers present the annual budget to their local boards of health, while others do not; these budgets, however, must be submitted to the county commissioners and their approval obtained for the county's share of the appropriation. The contract entered into with the State Board of Health as a basis for the cooperative budget must be signed by the chairman of the board of county commissioners and the mayor or city manager in case a city or town contributes to the budget. Revision of cooperative budgets are handled through the Division of County Health Work.

Accounting: Funds received for health purposes from the U. S. Public Health Service and the Children's Bureau are deposited with the State Treasurer and paid out in the same manner as State-appropriated funds.

Accounting: The financial management of local health departments is essentially a local government responsibility, but in discharging this duty the county or district health officer works in close cooperation

A special account is set up in a local bank for contributions received from philanthropic organizations, TVA, Office of Indian Affairs, etc. For the most part, budgets are established for the disbursement of these funds as in the case of those of the State, except that State funds and special funds are kept separate.

Accounting of revenues and expenditures of the State Health Department is attended to in the central administrative office. In performing this function, the Principal Accounting Clerk works in close cooperation with the State Auditor's office. Payrolls are made up and statements of general expenses pass through this office. Voucher warrants for payment of these obligations are issued in quadruplet, one going to the payee, one to the Auditor, one to the Treasurer, and one being retained. The voucher warrant must be signed by the Auditor and the State Health Officer per the Principal Accounting Clerk before being payable by the State Treasurer. Financial reports of expenditures of the State Health Department are made monthly to the Auditor, and the latter publishes an annual statement of such expenditures as a part of the financial report of the State government as a whole. All accounts of the State Health Department are subject to an annual audit by the Auditor's office.

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with the State Division of County Health Work. The State's subsidy to the district or county health department is paid monthly, the basis of such remittances being the receipt of satisfactory monthly statistical, narrative, and financial reports. All other agencies contributing to the budget make their remittances monthly also. In the majority of cases a special account for the local health department is established in a local bank and the remittances from the State and from local contributing agencies are deposited in this account by the county health officer. The obligations of the local health department are paid by checks issued on this special account by the local health officer and countersigned by the County Auditor. The county health officer is not a bonded employee. In the case of a Federal subsidy to a local health department, such funds are frequently budgeted in behalf of the salaries of persons employed, and periodic payments are made by checks issued directly to the person concerned. In this event, the check is endorsed by the receiver, with few exceptions, and turned over to the local health officer, who deposits it to the account of the health department and issues another check on the local account to the employee. Another plan that is followed in a few local units provides for the utilization of the financial facilities of the county government in handling the receipts and disbursements of the local health department. Whatever arrangement may be instituted with respect to such matters, the Director of the Division of County Health Work requires the local health officer to submit to the state monthly a detailed financial report. This report is made on a triplicate form furnished by the State. Disbursements are analyzed as to payee, voucher number, and code number of budget; and they are also itemized as to the main headings of the budget. Receipts and disbursements are summarized to show the status of the local account with respect to the provisions of the budget, and also with respect to cash balances on hand. The first copy of this report is retained by the local health department, the second is sent to the State Health Department and the third is transmitted to the county auditor. Apart from the transactions involved in making the above-mentioned financial reports of receipts and expenditures, no standard plan of local bookkeeping has been adopted for local health departments in general—such accounting being left to the discretion of local health officers. These officials may also set up petty cash accounts. No arrangements have been made for the official audit of local accounts of health departments. It may be added also that inventories of equipment owned by local units are not kept.

The annual financial report of local full-time county and district health departments is compiled from the budget estimates and is published in the biennial report of the State Board of Health.

Purchases: Purchases of the State Health Department are made through the State Division of Purchases and Contracts. Purchase orders are handled through the central administrative office by the Principal Accounting Clerk. Such order forms are made out in quadruplet, one going to the Budget Bureau, one to the Auditor, one to the Division of Purchases and Contracts, and one being retained. The Laboratory of Hygiene, as an exception to this rule, places orders direct with the commercial firms, and the Division of Oral Hygiene negotiates prices with commercial houses for dental supplies, but the orders are placed by the Division of Purchases and Contracts.

Traveling Expenses: Automobiles are purchased and operated personally by the employees of the State Health Department. When used for official business, the employee is reimbursed on the basis of 5 cents per mile. No insurance, insofar as the State Health Department is concerned, is required. A truck and trailer are operated by the Division of Industrial Hygiene, a truck by the Division of Epidemiology, and one by the Division of Oral Hygiene for the puppet show. A truck and passenger automobile are owned and operated by the Laboratory of Hygiene. Actual expenses are allowed for travel by public conveyances. Within the State a subsistence allowance of an amount not to exceed $4.00 a day is provided for board and room, and without the State this amount is not to exceed $6. On forms supplied, the field staff is required to keep an itemized record of these expenditures on the basis of which monthly reimbursements are made.

Printing and Binding: Binding jobs and the printing of forms, publications, etc.—such as, for example, the biennial report, the monthly bulletin, reports of the Bureau of Vital Statistics, health pamphlets and circulars, charts, etc.—are handled by the Division of Purchases and Contracts through the central administrative office. Budgeted funds for this purpose for the fiscal year 1937-38 were as follows: (1) Central Administrative Office, $8,500 appropriated by the State Legislature; (2) Division of Preventive Medicine, $4,000 contributed by the Children's Bureau; and (3) Division of County Health Work, $500 allocated by the U. S. Public Health Service.

Purchases: Purchases of the local health department are transacted locally. The services of the State Division of Purchases and Contracts are not extended to local health departments subsidized by the State Board of Health. The Attorney General has ruled that the services of the Central Purchasing Agent of the State cannot legally be utilized by local health departments.

Traveling Expenses: The travel allowance of field personnel of whole-time county and district health departments, as provided for by the contract between the State Board of Health and local boards of health, is as follows: (1) $25 per month for depreciation on cars owned by such employees; (2) 3 cents per mile for earned travel. All funds budgeted for travel of an employee can be used any time within the fiscal year, but the total amount of the reimbursement cannot exceed the amount budgeted for any particular employee. When two or more employees travel together, travel allowance is permitted for only one car. Monthly travel statements must be filed with county and district health officers by each employee drawing travel allowance on blanks supplied by the State Board of Health, showing mileage per day and places visited.

Printing and Binding: Printed forms used by local health departments are supplied by the State Health Department when the State requires a form to be filled out. Printing jobs that are strictly local in character are transacted locally and paid for from the local unit's budget.

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5) *Filing Service.*—A central filing system with two filing clerks in charge has been established by the State Health Department as a section of the Cen-

tral Administrative Office. The clerk of a county or district health department, operating under the health officer, is in charge of the files of the local health units. On the staff of the Division of County Health Work provision is made for a statistical consultant who cooperates with local health departments relative to improving the efficiency of the local clerk, and one phase of the statistical consultant's work includes the further development of a local filing system.

STATE

The principal features of the State's filing system are as follows:

(1) *County Organization File.* Filing space alphabetically arranged is provided for each county and district health department. Within each of the subdivisions of this file folders for each division of the State Health Department, distinguished from each other by colored guides, are placed when needed. The materials filed within these folders are arranged according to the date the document bears, i.e. those in January in order of the days of the month are placed at the back of the folder. Those for February occupy the position in front of January, etc. This file is set up on an annual basis and the materials for the preceding year, as well as the current year, are kept in the filing room, whereas the contents of earlier files are put in storage.

(2) *File Covering Special Topics.* (Water, Sewage, Milk, etc.) Space is provided in this file for each county arranged in alphabetical order. These main sections are further subdivided according to the cities and towns situated in the county represented. The folders placed within these subdivisions are distinguished from each other by the use of colored guides, i.e., the water folder guide is one color, the milk folder another, and so on.

(3) *File for Materials of a More Permanent Nature.* Space in this file is provided for each administrative division of the State Health Department, namely, Central Administrative Office, Division of Preventive Medicine, and so on, the arrangement being alphabetical. The folders within these divisions of the file are assigned topical headings, the guides of such headings not being distinguished by color but arranged alphabetically. Materials appearing in these files include such matters as certain expense accounts,

COUNTY OR DISTRICT

I. *General Files:* For filing correspondence, reports and other material of letter size, the following guide for setting up a filing schedule in local health departments has been established.

A. *State Board of Health*
   1. Executive Office
   2. Division of County Health Work
      a. Correspondence
      b. Statistical reports
      c. Narrative reports
   3. Division of Epidemiology
   4. Division of Vital Statistics
   5. Division of Oral Hygiene
   6. Division of Preventive Medicine
      a. Maternity and infancy
      b. School nursing
      c. Crippled children
   7. Division of Sanitary Engineering
   8. Laboratory of Hygiene
   9. Division of Industrial Hygiene

B. *Administration—General*
   1. U. S. Public Health Service
   2. Tuberculosis Sanatorium (N. C.)
   3. Other State agencies and departments
   4. Miscellaneous

C. *Administration—Local*
   1. County Board of Health
      a. Correspondence
      b. Reports
   2. County Commissioners
   3. Correspondence with other county agencies (County Tuberculosis Sanatorium, County Hospital, County Home, etc. If sufficient amount of correspondence is carried on, then a separate folder should be made for each, such as "a. County Tuberculosis Sanatorium," "b. County Home," "c. County Hospital," and so on.)

reports of field visits of central personnel, important documents such as agreements, etc. Because of the difficulty of classifying this material for ready reference, index cards are also made out and sometimes several such cards are executed for the same document so as to list it under several titles, thereby facilitating its location in the file when needed.

(4) *Vital Statistics File.* A special file is set up for vital statistics. Where money matters are concerned, the letter of inquiry goes into the file under the name of the person whose birth or death certificate is concerned, and a cross reference sheet is used to give the name of the person who wrote the letter.

(5) *Miscellaneous File.* The letters of the alphabet are used to provide the main subdivisions of this file. Within these subdivisions are placed folders for organizations, localities outside the State, etc. The labels of these folders are in five colors, each representing a group of letters, and the order of the colors in the main subdivisions of the file is based on the second letter of the filing title. The materials filed within folders are arranged in chronological order.

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4. Publicity and news releases
5. Education and health talks
6. Form letters
7. Miscellaneous

D. *Finances and Supplies*

1. Budgets
2. Contracts
3. Cancelled vouchers and statements by month
4. Companies from which supplies are ordered
5. Miscellaneous

E. *Vital Statistics*

1. Local registrars
2. Reports from local registrars (current year)
3. Correspondence with regard to birth and death certificates

F. *Sanitation*

1. Café Sanitation
   a. Separate folder for each café under supervision
   b. Miscellaneous
2. Dairy Sanitation
   a. Separate folder for each dairy under supervision
   b. Miscellaneous
3. General Sanitation
   a. Water supplies
   b. Sewage disposal
   c. Schools
   d. Complaints
   e. Miscellaneous

G. *Nursing Program and Cooperative Agencies*

1. Schools and school personnel
2. Parent-teacher associations
3. Midwives
4. Miscellaneous

H. *Miscellaneous*

1. Correspondence with other health officers
2. Correspondence with physicians
3. Special reports, etc.

The clerk is responsible for placing all materials in the files, including replacement of material taken out of the files by other staff members. In preparing materials for filing, each page should be marked, preferably with red pencil, as to code number, such as, for example, A,1—the code number for the State Board of Health, Executive Office, and arranged in proper order for filing, namely, A,1 A,2 etc. Letters sent and received should be filed together, the latest to the front, all correspondence being stapled or clipped in the upper righthand corner. Cardboard guides and folders of a good quality should be used. All correspondence, etc. should be filed behind the guide, and six to eight letters pertaining to a person justifies the use of a separate folder. In district health departments different colored labels may be used on the folders to facilitate the identification at a glance of the several local health jurisdictions which compose the district, but the material for all counties

should be kept in one folder until sufficient material has accumulated to justify separate folders.

The schedule as set up allows for a file to be carried over a number of years; if it becomes necessary to make a new folder for any item of the schedule, both the old and the new one should be dated, for example: "A,1 Executive Office—1937" for the old and "A,1 Executive Office—1938" for the new.

The guide for setting up the filing schedule should be kept in the front of the file for ready reference, and additions to the file should be noted on the schedule itself. In the headquarters of district health departments the suggested schedule here may need enlarging, and in branch offices a simplification may be in order.

II. *Family Folder File.*—A manila folder of good quality is used, which when folded, fits into a 5 x 8 inch file. In the folder are placed all open records, except school and V-D, of the family. The folder itself carries space for family name, color, date and contact, family number, three successive addresses, three successive appraisals of economic status, three successive appraisals of excreta disposal status, three successive appraisals of water supply status, three successive appraisals of screening status, household roster, and case histories entries. The family folder is carried into the field by the nurse and essential data are entered at the time of the first visit to the home or clinic. After the folder is returned to the office by the nurse, the secretary gives the family a serial number entered under "Family Number" and also on the active record of each individual in the family. If there are two or more nurses in the local health department, one uses the letter "A" as identifying the geographical district in which she works, another the letter "B" and so on. The number placed on the family folder by the secretary runs serially, namely, 1-A, 2-B, etc., irrespective of the geographical nursing districts. The family folder records are filed alphabetically as to geographical district in 5 x 8 inch box files, using alphabetical guides. One such file is used for each district so that each nurse has her active case load on her desk for daily use. Whenever there is no longer any need for a record of a given individual to be kept in the family folder, that record is withdrawn and filed alphabetically in a closed file. Before withdrawing such record, an entry is made on the family folder in the column "Date Closed" and, if the person is dead, cause of death is noted in this column. Individual terminated case records are filed alphabetically by service, that is, Maternity, Tuberculosis, etc. Furthermore, if there is no longer a reason for carrying the family, then the whole record is completed and filed alphabetically. A cross-index card is marked "Terminated" and left in the active file in the event the family is re-opened. If a family moves to another county, the health officer may send his record to the other health department, an entry being made on an index card to this effect.

When the family folder is turned over to the secretary for serial numbering, an index card (3 x 8) is made also, carrying the family name, family folder number, address, and other essential data. If the patient has a name that is not the same as that of the household head, a second index card is made out, carrying such cross-reference data as are needed. Index cards are filed alphabetically by the surname of the household head, and classification by geographical divisions is unnecessary; the same type of box file as used for filing family folders is used for cross-indexing, except that this file is smaller in size.

6) *Public Health Library Service.*—The library of the State Health Department is administered as a part of the Central Administrative Office. It is in the charge of the two clerks who operate the central filing system and who are also trained librarians. The reception room of the State Health De-

partment for the most part is used to house the books, journals, and pamphlets of the library, and also serves as a reading room. Additional bookcases are located in the corridors of the Health Building, and the engineering library is situated in the Drafting Room of the Division of Engineering. The State Health Department library includes the valuable collection of public health and medical literature of the late Dr. Charles O'H. Laughinghouse, long-time member of the State Board of Health and former State Health Officer.

STATE

Books: The usual reference books in public health and medical literature are well represented, including several systems of medicine. There is also a complete set of bound volumes of the biennial reports of the State Board of Health and of the Public Health Bulletin published by the State Board of Health. These books are catalogued and lent on the basis of procedures carried on in public libraries in general. Provision is made for the placement of requisitions with the Principal Accounting Clerk when staff members wish to order new books for the library.

Journals: With respect to public health and medical periodicals, no subscriptions are made for them by the State Board of Health, but copies of the publications of the American Public Health Association, American Medical Association, Southern Medical Association, etc. are donated to the library by staff members. As numbers are received by the librarians, they are filed according to the name of the journal. Annually the numbers of the *Journal of the American Medical Association* are bound into two volumes and these are placed in the bookcases.

COUNTY OR DISTRICT

With the encouragement of the State Health Department, progress is being made in the establishment of public health libraries at the headquarters of local health departments, and the contingent fund from local cooperative budgets may be used for gradually building up these local libraries or, a special library item is set up in the local budget. The literature of these libraries consists of the standard textbooks on public health, medicine, and sanitary engineering; the publications of such organizations as the State Board of Health, the U. S. Public Health Service, the American Public Health Association, the American Medical Association, and State Statutes, State Board of Health regulations, local ordinances, etc. As yet a loan plan for the distribution of literature of the library of the State Health Department to the personnel of local health departments has not been developed, nor has a plan for organizing the staff of local health departments into study groups been encouraged, the purpose of which would be to obtain group cooperation in keeping up with current public health literature.

Pamphlets: Health pamphlets received by the State Health Department are filed according to subjects, i.e. a pamphlet on "measles" is filed under the heading "measles." An index card is made out for each pamphlet on which is listed the subject, author, publisher, place in the file, etc. If a pamphlet deals with more than one subject, a cross reference card is provided. These index cards are filed alphabetically. Another index card file is set up according to the headings into which this file for pamphlets is divided, and the topics of pamphlets in the file are listed under each classification.

7) *Publicity Service.*—Of approximately 200 newspapers published in North Carolina, about 35 are issued daily. The State Health Department does not subscribe for newspapers, but through the courtesy of the editors it receives about 50 papers.

The newspaper publicity service is operated as a part of the Central Ad-

ministrative Office. A publicity specialist, who has had years of experience as a newspaper reporter, is in charge. His services are supplemented by the work of the Department of Health Education, Division of Preventive Medicine. The newspaper service of the latter department differs from that of the publicity specialist in that the copy prepared is more of an educational nature than it is a strictly news story. With reference to district and county health departments, the county health officer handles local publicity matters by cultivating the support of local newspaper reporters or the editors of local papers.

STATE

Releases of news items or stories pertaining to public health are being published constantly. The State Health Officer and the directors of the divisions of the State Health Department work through the publicity director who, when supplied with the basic information, prepares it in newspaper form and attends to the distribution of such copy. Sometimes articles appearing in the Bulletin of the State Health Department may be rewritten for newspaper publication by the publicity specialist as an interview with the author. In obtaining newspaper releases, the publicity specialist utilizes the Raleigh office of the Associated Press, or distributes such materials direct to the editors of the newspapers published in the State.

The publicity specialist looks over the papers received by the State Health Department for publications pertaining to health. When an editorial appears on a health topic, he calls it to the attention of the State Health Officer and frequently a letter of commendation is sent to the editor. Clippings of releases which have been used by the State Health Department are made by the publicity specialist and filed in a scrap book. In this way a chronological record of many of the developments of the State Health Department is provided for. Furthermore, the State Health Department subscribes to the Carolina Clipping Service, and through this agency receives clippings of news print issued by the newspapers of North Carolina pertaining to public health. These clippings cover releases by the State Health Department, local health departments, and other agencies. The important items are placed in the central files of the State Health Department.

COUNTY OR DISTRICT

The releases of the State publicity specialist are sent to the local health officers. These officials are urged to adapt this material for local publication.

Some of the local health officers have arranged with publishers for a health column under the name of the local health officer. Articles dealing with health topics, or with news items of public health interest, appear in these columns from time to time. A number of local health officers frequently make use of the local newspapers for the publication of health stories or health educational items. These publications may be clipped from the newspaper and filed in a scrapbook. In Hertford County, for example, health news items appear in all issues of the local weekly newspaper and in addition, once a year an edition of this paper is devoted to public health work.

b. EPIDEMIOLOGICAL SERVICE

The control of communicable diseases has constituted a major objective of the state and local boards of health in North Carolina since their creation. Administrative trends may be sketched as follows: 1). *Constant vigilance with respect to epidemic diseases:* The need for such watchfulness was demonstrated as early as 1888 when the State Board of Health was confronted with a serious situation occasioned by refugees to Western North Carolina

from Florida where a yellow fever epidemic occurred. 2). *The utilization of public health educational measures:* Printed matter began to appear at least as early as 1893, when a pamphlet was issued by the State Board of Health on quarantine and disinfection. 3). *The utilization of supplemental support:* Of the numerous instances in the records, the following selections will suffice to illustrate the success of the State Health Department in the fulfillment of its ambitions in this direction. In 1910 the support of the Rockefeller Sanitary Commission was obtained to combat hookworm disease, and for several years thereafter an active campaign was carried on. In 1912 a resolution passed by the conjoint meeting of the State Medical Society and the State Board of Health to the effect that pellagra was an interstate problem, was an important factor in provoking Congress to make an appropriation of $45,000 for a study of this disease. In 1918, following the passage by Congress of the Kahn-Chamberlain Bill, approximately $24,000 was made available to North Carolina for the control of venereal diseases, resulting in the establishment of a Bureau of Venereal Diseases. In 1920 a malaria control demonstration was organized in certain towns and cities in eastern North Carolina with the cooperation of the U. S. Public Health Service and the International Health Board; and in 1923 a Division of Malaria was established in Pamlico through local and International Health Board support. To supplement the State's resources, support from the Federal Government has been received continually in such fields as malaria and venereal disease control. Advantage has also been taken of funds made available by outside agencies for the training of staff members engaged in venereal disease activities. The Rosenwald Fund and the TVA have been generous, directly or indirectly, in the support of epidemiological projects, and the Zachary Smith Reynolds Foundation, founded in 1936, has recently made the munificient gift of $100,000 annually for a period of 15 years to the State Board of Health for the further development of a militant campaign against syphilis within the State. 4). *The utilization of campaigns and demonstrations to initiate control measures:* Diseases of public health interest in North Carolina have been singled out for special attack from time to time, namely: hookworm disease, campaign beginning in 1910; typhoid fever immunization, campaign, 1914; venereal diseases, special emphasis received in 1918 and renewed interest in recent years; malaria, the demonstration for control beginning in 1920, etc. 5). *Facilitating the use of scientifically approved biological products:* Provisions were made for Pasteur treatments in 1907. The free distribution by counties of diphtheria antitoxin was made possible by legislation enacted in 1909, and in 1911 the Legislature appropriated approximately $1,000 to facilitate the making of contracts with the manufacturers of diphtheria antitoxin. Free distribution of typhoid vaccine was introduced about 1914. Later, agents for active immunization against diphtheria, the distribution of drugs for the treatment of venereal diseases, etc. have followed. 6). *Sponsoring legislation and promulgating rules and regulations for the reporting and control of communicable diseases:* The records are filled with legislative enactments pertaining to public health. In 1917 the General Assembly passed "An Act to prevent and control the occurrence of certain diseases in North Carolina", which deserves special mention because it provides for the State Epi-

demiologist and Bureau of Epidemiology. 7). *The development over the years of an organization for rendering epidemiological services:* From the time the Bureau of Epidemiology was established in 1917, under the direction of Dr. A. McR. Crouch, until 1932, when it was reorganized by Dr. D. F. Milam, the administration of the Bureau has undergone many vicissitudes. Twice it was consolidated with the Bureau of Vital Statistics and once with the Bureau of County Health Work. During this period the Bureau of Venereal Diseases, which had been established in 1918 under the direction of Dr. J. A. Keiger with the aid of Federal funds, was joined (1921) with the Bureau of Epidemiology. The directorship of this Bureau changed hands frequently, and it would appear that major emphasis at one time was given to venereal diseases and, at another, to malaria control. Following its reorganization in 1932, a more balanced program has been maintained, and the Bureau has been able to continue to function as a separate unit of the State Health Department. [1]

STATE

Organization

Legislative provision is made for a State Epidemiologist and a Division of Epidemiology[2] operated under the control of the State Board of Health. The scope of the Division's activities embraces communicable diseases in general, except tuberculosis. The staff of the Division consists of 11 employees, namely: (1) Director or State Epidemiologist; (2) assistant director of venereal disease control; (3) a sanitary engineer, an entomologist and two laboratory technicians engaged in malaria control, and (4) a secretarial staff consisting of 2 stenographers and 3 clerks. Mandatory qualification standards have not been established by law for the director and other key employees, but by custom a physician receives the appointment of state epidemiologist. The present Director has had specialized training to fit him for his responsibilities, and the venereal disease officer has had special training. The Division's budget of 1937-38 totaled $56,645, of which the State appropriated $35,445, and the U. S. Public Health Service contributed

LOCAL

Organization

Local Quarantine Officers: Except for incorporated municipalities of 10,000 population or over, for counties with a joint board of health presiding over the county and municipalities having a population of 10,000 or more, or for counties supporting organized health services, provision is made for a county quarantine officer elected by the county board of health. Such local board of health is required to notify the Secretary-Treasurer of the State Board of Health of such elections. Vacancies occurring in this office are filled by the local board, or, if the Board fails to act, then by the Secretary-Treasurer of the State Board of Health. The county quarantine officer is required to take before the clerk of the superior court, an oath of affirmation to faithful performance of duty and to notify the State that such oath has been taken, but on failure to do so, the Secretary-Treasurer of the State Board of Health is empowered to remove such an officer and to appoint a quarantine officer. Quarantine officers also take oaths of allegiance

[1] The directors of this Bureau have been as follows:

Dr. A. McR. Crouch	1917-19
Dr. F. M. Register	1919-20; 1923-30
Dr. J. S. Mitchener	1920-23
Dr. H. A. Taylor	1930-31
Dr. John H. Hamilton	1932-33
Dr. D. F. Milam (Acting)	1933-34
Dr. J. C. Knox	1934-

[2] The name was changed by action of the State Board of Health in 1931, from the Bureau of Epidemiology to the Division of Epidemiology.

$21,200. The allocate share for venereal disease control appropriated by the State was $28,780, except for $3,780 contributed by the U. S. Public Health Service. Of this fund, $23,680 was available to subsidize venereal disease clinics operated throughout the state—$10,000 being used for antisyphilitic drugs and the remainder being held for matching purposes, purchase of equipment, etc. Furthermore, $15,000, all contributed by the U. S. Public Health Service, was allocated for malaria control. This analysis of the financial assets of the Division does not include $100,000 recently donated by the Reynolds Foundation towards venereal disease control activities within the State. In addition, legal provision is made for an annual appropriation of $3,000 to be used in the control of ophthalmia neonatorum and for an emergency fund of $5,000 to be used at the discretion of the Governor in case of visitation of a pestilential disease.

to the United States in order to receive the Federal appointment of assistant collaborating epidemiologist, a position which carries with it the privilege of using franked mail. Compensation for quarantine officers is paid monthly by the county treasurer or corresponding local officer on certification by the Secretary-Treasurer of the State Board of Health of the satisfactory performance of duties in accordance with a system of fees established by the State Board of Health for each item of work involved, except that the annual contribution shall not exceed a maximum sum specified on the basis of the population of the county. As a basis for certification, the quarantine officer files with the State Epidemiologist a monthly report of the services rendered on a form prescribed for the purpose; this report is checked against the morbidity records of the Division and corrections are made, if need be, accordingly. The quarantine officer is entitled to reimbursement for incidental expenses incurred, including postage and disinfectants up to $100 annually. Furthermore, legal provision is made for county commissioners to pay expenditures incurred in the examination, isolation, and treatment of venereal disease patients. Similarly, municipal quarantine officers are elected for municipal health jurisdictions.

Whole-time county and district health officers act as county quarantine officers in organized counties or district health jurisdictions, replacing the county quarantine officers, i.e. the position of county quarantine officer is abolished when organized health services are established in counties or districts. Oaths of affirmation and allegiance are also required of these officers.

DUTIES

Regulatory Functions: The State Board of Health has power to declare what diseases are preventable and to adopt rules and regulations covering minimum requirements for their control. Provision is made for publication of regulatory measures, and copies of these are furnished free to those concerned, such as health officers, quarantine officers, etc.[1] In general, the basic laws of the State establish the broad framework upon which the more detailed regulations of the State Board of

DUTIES

Regulatory Functions: Local boards of health are empowered to promulgate regulatory measures pertaining to the control of communicable diseases. This authority is exercised in the direction of supplementing the powers granted by State laws and by regulations adopted by the State Board of Health, and may be shared, at least to some degree, with the general legislative authority or police powers of county and town governments. Local boards of health may require school chil-

[1] Regulations governing the control of communicable disease in North Carolina, adopted by the State Board of Health in May, 1936. Subject matter covered includes: definition of terms, the list of notifiable diseases, reporting, methods of isolation of cases and of certain carriers, concurrent and terminal disinfection, restrictions of food handlers, transportation of cases, and funerals.

Health are based. Provision is made for the imposition of penalties for violation and also for making revisions of such regulations. Special reference in the law is made to the powers of the State Board of Health with respect to certain diseases such as venereal diseases and ophthalmia neonatorum.

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dren to present a certificate of immunity against smallpox and local governments may enact regulations covering the vaccination of inhabitants (exceptions may be made for certain persons by a jury, owing to a peculiar state of health). Mandatory immunization against diphtheria has been required of school children in a few instances by local regulatory agents for sometime past, but in 1939, the General Assembly enacted mandatory legislation for the whole State, requiring the immunization of all children between the ages of six months and one year; exceptions being made for conscientious objectors. Schick and tuberculin tests may also be made compulsory by local boards of health for school children, and each year blood tests for syphilis may be required of public school teachers. Local board of health ordinances may also cover such matters as exclusion of children from public schools when shown by examination to have a communicable disease, such children being readmitted by permission slips issued by the health officer. Furthermore, schools may be closed by municipal or county governments on recommendation of the local board of health as a precautionary measure against the transmission of communicable disease. Local health boards may add to the State's list of notifiable diseases, as, for example, pneumonia has been made a reportable disease for Wilmington City-New Hanover County Health Department by enactment of a local ordinance. Then too, the State law may delegate specific regulatory powers to local boards of health, as for example, the right to govern the travel locally of persons from infected places in other states.

The system of quarantine in force in incorporated municipalities having a population of 10,000 or more, and in counties with a joint board of health presiding over the county and municipality, must be approved by the State Board of Health. This applies particularly to isolation and quarantine regulations.

General Functions: The staff of the Division of Epidemiology is to see that the rules and regulations of the State Board of Health are executed. In practice, the State Epidemiologist, through official channels, is responsible for rendering the services of a consultant to local health officers, particularly to those who operate on a full-time basis, and for exercising leadership among them in the formulation, execution, and evaluation of the routine epidemiological program carried out in local health jurisdictions. In general, the specialized facilities of the Division of Epidemiology supplement the generalized facilities of local health organizations in the joint development and execution of an integrated communicable disease program. With respect to unorganized parts of the State, the State Epidemiologist visits only on request of local quarantine officers who may

General Functions: The county quarantine officer or corresponding official enforces all laws within his jurisdiction pertaining to inland quarantine and disinfection as well as the rules and regulations covering these matters as prescribed by State and local boards of health. The county board of health arranges with the local quarantine official to accept and discharge the duties assigned to him by law, and such other duties pertaining to the control of infectious diseases as may be assigned to him by the local board of health. Provision is made in the State law that a local quarantine officer cannot be interferred with in the performance of his duties. The regulatory powers of boards and the executive functions of health officers are restricted in certain particulars by State laws, as for example, a child or other person may remain in the custody of his parents or family.

seek his help or guidance in solving problems which arise.

The application of isolation and quarantine measures pertaining to the control of the various reportable diseases of the State is carried out by the staff of local health departments in organized parts of the State and by the quarantine officer in unorganized health jurisdictions. In practice, local public health nurses frequently have the responsibility of quarantining or isolating cases of communicable diseases or collecting epidemiological data pertaining to them. For the major diseases, the first visit may be made by the health officer (or his medical assistant, if any), and these officials may impose isolation restrictions on such cases, whereas, the nurse makes subsequent follow-up visits. The detailed procedure to be followed up in exercising these functions are incorporated into the rules and regulations promulgated by State and local boards of health.

Special Services.—Some of the more specialized services of the Division may be enumerated as follows:

(a) *Morbidity Registration.*—The morbidity registration area is the county, and the technical aspects of collecting and analyzing the morbidity data is a function of this Division, cooperating with local health officials. Morbidity reporting goes back to 1893, and the systematic analysis of data collected, to 1918. The annual number of cases reported is about 54,000. Weekly and monthly compilations of morbidity reports for the State are sent to the U. S. Public Health Service; the weekly reports are telegraphed. Weekly reports of communicable diseases are also compiled according to counties and municipalities and mailed to local health and quarantine officers.

The completeness of morbidity returns is checked by the Division as follows: (1) annually the official roster of physicians is reviewed to determine the percentage of them who have reported communicable diseases; this figure is about 70 per cent for all doctors (including specialists, those on the inactive list, etc.); (2) returns made by counties are checked; (3) laboratory reports are checked against morbidity returns for the typhoid group, undulant fever, tularemia, and Rocky Mountain spotted fever (venereal diseases and tuberculosis are not included); (4) the ratio of deaths to morbidity is determined for certain communicable diseases. For example, during 1936 the following ratio obtained: diphtheria, 12 cases per

(a) *Morbidity Registration.*—Physicians (or if no physician is in attendance, the responsible person concerned) notify the local quarantine officer within 24 hours of the occurrence of a reportable disease. Reports are made on forms furnished by the State. Formerly these were of four types, but in November, 1938, a form was devised which could be converted, upon receipt, to a punched card, and all diseases except syphilis are now reported on this form. There is a place on the form to indicate when a new supply of forms is needed and both the local health officer and the State Epidemiologist are jointly responsible for replenishing supplies to physicians and others concerned. Physicians are permitted to telephone reports, especially those of a more serious nature, to local or state health authorities.

Cases of venereal disease may be reported by name (78 per cent) or by number; if reported by number, the physician is required to keep his records so that he will be in a position to make specific identification. (Inactive laws provide that druggists report to the State weekly on forms supplied them the proprietary remedies sold for use in venereal diseases, etc., and that druggists keep prescriptions for venereal diseases, etc., in a separate file subject to inspection by an officer of the State Board of Health). Since September 1935 morbidity returns of tuberculosis are being made

death, typhoid group, 7 cases per death, pellagra, 2 cases per death.

An annual bulletin on morbidity statistics is published (mimeographed) and includes the following analyses: (1) reported cases for the State as a whole of 33 reportable diseases, by months; (2) reported cases for each of 11 cities of 12 major reportable diseases; (3) reported cases by county, by month, for 27 reportable diseases; (4) reported cases of 33 communicable diseases by age; and (5) reported cases of 33 communicable diseases by race and sex.

(b) *Health Education of the Public.*—This field of activity includes the preparation and distribution of printed materials, talks to groups (may be illustrated by motion pictures, slides, etc.), newspaper publicity, radio addresses, preparation and display of exhibit materials, etc. Facts about certain communicable diseases have been presented in pamphlet form for publication, and, in addition, publications which treat of communicable diseases from the viewpoint of the health officer and physician have been issued. Furthermore, the laws of the State may specify particular education responsibilities pertaining to communicable diseases, and such functions may be shared with other divisions of the State Board of Health, as for example, the law specifies that the State Board of Health is to inform the public regarding the danger of opthalmia neonatorum and the importance of prompt treatment of this condition, but this service is handled by the Division of Preventive Medicine as a part of its maternity and infant welfare program.

(c) *Diagnostic Service.*—Occasionally the State Epidemiologist is called upon to go into the field to establish the diagnosis of communicable disease. Furthermore, the State Laboratory of Hygiene is an invaluable adjunct to the epidemiological staff, to county health officers, and to local physicians in making diagnoses.

(d) *Emergency Measures:* During the occurrence of an unusual prevalence of serious communicable disease the staff of the Division of

through the local and State authorities in conformity with the general procedures for reporting communicable diseases.

Within 24 hours of receipt, the local quarantine officer transmits returns received to the State Epidemiologist on forms supplied by the State. Local quarantine officers (not whole-time health officers) receive a fee of 50 cents for certain diseases reported to the state and 25 cents for others (except that the fee for secondary cases occurring in a family is less in amount, and in some counties the county commissioners have reduced the State's fee schedule).

(b) *Health Education of the Public.*—Popular education pertaining to communicable diseases is one of the principal features of the general health educational program carried on locally by health units. The staff is dependent upon the Division of Epidemiology for supplies of literature distributed locally. Personal interviews (especially when isolation procedures are being applied), talks to groups, newspaper releases, etc. are the educational agencies which are utilized. Educational measures may include motion picture reels pertaining to social hygiene, etc. mimeograph charts illustrating the manner in which communicable diseases are transmitted, etc.

(c) *Diagnostic Service.*—In organized health districts, physicians, teachers, parents, etc. are encouraged to share their responsibilities with local health officers for reporting communicable diseases when an illness occurs regarding which there may be a reasonable doubt as to the correct diagnosis. The local health officer may call in the State Epidemiologist if he is unable to reach a decision.

(d) *Emergency Measures, Epidemiological Studies, etc.:* The health officer of organized local health departments applies epidemiological

Epidemiology may supplement the facilities of local health departments in carrying out control measures. Legal provision is made for an emergency fund of $5,000, previously referred to.

(e) *Epidemiological Services.*— The Division of Epidemiology cooperates with other agencies such as the U. S. Public Health Service in planning and executing special studies of important communicable diseases. At present, attention is given to a malaria project in 7 counties in the eastern part of the State (Beaufort, Pitt, Greene, Edgecombe, Robeson, Halifax, and Wayne). All of these counties are organized on a full-time basis, and the health officers in charge have manifested a special interest and aptitude for work of this character. The plan contemplated is to integrate a malaria service into the generalized program of the local health departments with the aid of specialists (medical malariologist, entomologist, engineer, and two laboratory technicians) employed by the Division of Epidemiology. The U. S. Public Health Service contributed $15,000. A thick blood smear survey of school children is under way to define the localities in which the malaria problem is appreciable. Within these recognized areas clinical histories of malaria will be taken; the index of anophelines will be ascertained by the use of traps; and the breeding areas will be studied by making larva surveys, determining the reaction of the water involved, etc. Through the Legislature, authority has been granted to regulate the impounding of water, a permit being required before such impoundings are permitted, providing the area impounded is as great as one acre.

procedures that are required to combat the usual outbreaks of epidemic diseases that occur in his health jurisdiction. In handling the more serious diseases, the facilities of local units may be supplemented by those of the Division of Epidemiology and other State departments, should the outbreak be unusually severe.

(e) *Epidemiological Service.*— Data collected in investigating reportable diseases are used to establish the epidemiological characteristics of these diseases in the several whole-time health jurisdictions, especially for those diseases which constitute important public health problems. Public health nurses are relied upon quite largely to do placarding of communicable diseases. In addition to special forms provided by the Division of Epidemiology there is a general form used for recording information obtained by making medical and nursing visits to patients with communicable diseases, other than tuberculosis and venereal diseases. This record is carried in the family folder until terminated, when it is placed in the terminal file for communicable diseases. If the service of the nurse is merely a quarantine matter it may not be necessary to open a family folder, providing the family has not been so carried before the case in question occurred. In addition to this general form special case record forms for epidemiological investigation of communicable diseases have been prepared by the Division of Epidemiology for the convenience of local health officers, namely: diphtheria, scarlet fever, smallpox, typhoid fever, paratyphoid B., tularemia, endemic typhus fever, rabies, and Rocky Mountain spotted fever. The form for typhoid fever, when folded, fits into the family folder used by local health units, but in practice a separate file is used; this form is made out in duplicate—the original being retained and a yellow copy being transmitted to the Division of Epidemiology. Special files are set up in the local health office for diphtheria, scarlet fever, smallpox, etc. A binder record sheet is used for minor diseases such as mumps, chickenpox, etc. A number of local health departments prepare tabulations,

tables, graphs, etc. from the epidemiological data collected, to show geographical distribution of diseases, incidence by months and years, incidence by age-groups, by sex, etc.

Malaria.—The formulation and execution of malaria programs locally may require the supplemental assistance of the Division of Epidemiology, the State Laboratory of Hygiene, the Division of Sanitary Engineering, and Federal agencies. In Edgecombe county, for example, such a cooperative program is being carried out. Thick blood smears are taken of school children in a number of areas in this county. These smears are examined in the State Laboratory of Hygiene. On the basis of information gained from these smears, the status of malaria in various sections in the county is determined. Where smears indicate the existence of a serious malaria problem, a detailed map of the region is prepared to show individual houses, roads, courses of streams, and the relationship of cases to breeding places of anopheline mosquitoes. Each house is numbered and a history of malaria taken of the families who occupy them. Symbols are used to indicate on the map whether the family has had malaria or not. With respect to control measures, extensive demonstration projects are being carried out under WPA funds. Such demonstration districts are provided for by law, and an agreement is entered into with Federal authorities which provides for the maintenance of ditches by landowners in these demonstration areas. The services of local personnel are supplemented by staff members of the Division of Epidemiology. Furthermore, the town of Tarboro has an ordinance[1] for the control of mosquitoes, and an inspector is employed to enforce its provisions; he makes house-to-house inspections at frequent intervals during the mosquito breeding season, and carries out rather an extensive oiling program in the town and its vicinity.

Malaria control work in Wilmington and vicinity is administered by a commission consisting of two members, one of whom is the health officer. The budget for this program amounts to $2,500 annually, the city and New Hanover county sharing the expense equally. In recent years arrangements have been made to provide prison labor in addition to a crew of three oilers. Measures which have been put into effect include an extensive drainage project and the use of oil for spraying mosquito breeding areas. Interest was stimulated in malaria control by Federal authorities at the end of the World War and the Federal Government took the initiative in establishing the main drainage channels around the city. Although malaria has been greatly reduced in Wilmington, mosquitoes remain somewhat a pest owing to the fact that no effort is made to control salt water mosquitoes. Control measures include drainage, screening of homes, oiling and dusting of bodies of water involved, and in some instances the removing of the residents to a more healthful locality.

(f) *Venereal Disease Service:* A section of the Division of Epidemiology is devoted to the control of venereal diseases. The director, who has specialized in public health in general and venereal disease in particular, functions as an expert adviser to local health officers with reference to the formulation, execution, and evaluation of locally operated programs. Emphasis is placed on syphilis. The scope of service includes: (1) operation of clinics

Venereal Disease Service.—Local cooperative venereal disease programs are operated on the basis of an agreement entered into between the State Board of Health and local boards of health. The principal administrative features of the plan are: (1) Support and cooperation must be pledged by local agencies concerned (health authorities, the county medical society, and county and municipal governments, including police authorities and welfare

[1] Ordinances for the prevention of mosquito breeding in the town of Tarboro, North Carolina were adopted February, 1937. Provisions of this enactment cover: screening; standing or flowing water and methods of treatment, including emptying containers at seven-day intervals, using larvacides, freeing from vegetable growth and other obstructions, stocking with fish, filling or draining, etc.

which are held in centers of population throughout the state. For the most part (about 80 per cent) these clinics are in the charge of local health officers. Drugs are supplied free by the State. The aim is to give each syphilitic patient a minimum of 40 treatments—20 arsenic and 20 heavy metals. The average attendance at venereal disease clinics has been about 40 patients; (2) examination and treatment of prisoners is provided for in the law and faithfully carried out in some localities. A high percentage (about 65 per cent in some samples taken) of prisoners is found infected with syphilis; (3) serological surveys of State institutions, and in some instances of industries, constitute a part of the program. The results of one such survey conducted in an industry employing 800 men were:

White employees—
12 per cent positive
Colored employees—
20 per cent positive;

(4) the examination of domestic servants for venereal diseases is provided for by State law and the results of blood tests run about 30 per cent positive; (5) Legislation covers venereal disease examinations for those applying for a marriage license; (6) the field investigations of venereal diseases are largely limited to the return of delinquent patients for treatment at clinics, little being done at present to investigate sources of infection or to obtain a complete epidemiological picture; (7) legislative provisions fashioned to secure the cooperation of druggists in uncovering persons with venereal diseases are inactive; (8) provision is made for the control of ophthalmia neonatorum, and to this end prophylactic silver nitrate solution for instillation into the eyes of the new-born is distributed by the Division of Preventive Medicine to those engaged in midwifery.

Owing to the beneficence of the Reynolds Foundation, the venereal disease program of the State Board of Health is being markedly expanded at present. The staff of the Section of Venereal Diseases is being enlarged by the employment of full-agencies). (2) Executive responsibility is vested in the local health officer, but the selection of local professional personnel for treatment centers by the health officer is subject to the approval of the State Board of Health. (3) Clinic facilities must meet minimum requirements prescribed with reference to space, equipment, accessibility (a number of centers may be operated in a local health district), accommodation of races (mostly colored patients attend), etc; and clinics must operate in conformity to scheduled clinic hours; clinics may be advertised through the newspapers and also by those who attend. (4) Local funds for venereal disease activities, which conform to requirements specified by the State Board of Health, are matched by available funds handled by the State Board of Health on a 50-50 basis, unless special circumstances necessitate an adjustment of such a matching basis. (In the laws of the State provision is made for county commissioners to pay expenditures incurred in the examination, isolation, and treatment of venereal disease patients). (5) Minimum requirements pertaining to clinic management are prescribed, including: (a) an adequate physical examination of new patients to determine their physical status; (b) the collection of epidemiological data as to source of infection, persons exposed to infection by the patients, etc., and patients are interviewed to this end when they enter the clinic; and (c) the official reporting of new cases of venereal diseases by the clinic. (6) Provision is made for adequately trained personnel to administer treatments, it being understood that venereal disease clinicians must meet the requirements specified by the U. S. Public Health Service or the Conference of State and Territorial Health Officers, and, also, that clinics be operated in compliance with instructions furnished by the State Board of Health, for example, urinalysis and blood counts are to be made when indicated, patients must be queried relative to untoward reactions following their last treat-

time syphilologists, part-time clinicians, full-time public health nurses, clerks and laboratory technicians. The program projected provides for a community basis of work. Certain demonstration areas scattered throughout the state are being selected on the basis of local financial participation, the existence of a definite need, and the assurance of adequate cooperation. Through financial support from this source, drugs, supplies, and equipment will be made available also.

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ment, etc. (7) The staffs of local health departments are utilized so far as practicable in performing the services that are required in putting into effect the venereal disease program. Many health officers are enlisted as clinic physicians. Public health nurses work in clinics and make follow-up visits in the field. The sanitary inspector is used to contact certain cases calling for the services of a male worker. Special clinic nurses may be employed in large clinics but the responsibilities of these nurses are confined essentially to their clinic duties. The procedure recommended for following lapsed cases calls, first, for a mail notice, second, for a nursing visit, and ultimately, as a last resort for legal procedures resulting in the arrest of the patient. Case-finding visits and epidemiological investigations are included as a part of the field program, and the health authorities may resort to legal procedures to obtain treatment of infectious patients who refuse to cooperate. Provision is made for inter-jurisdictional notification, on forms prescribed by the State, when patients move from one health jurisdiction to another. (8) Types of patients to be admitted include: (a) syphilitic patients, (expectant mothers, persons with primary or secondary lesions, children born of syphilitic parents, infectious relapsed patients whose duration of infection is under five years, patients with gummata, iritis, early nervous system manifestations, etc.) and (b) patients with gonorrhea, chancroid, and granuloma inguinale. First consideration is given to infectious patients, but in practice the patients who attend clinics have the disease most frequently in chronic form, especially in the case of the newer clinics. (9) On forms supplied, monthly clinic reports based upon individual clinic records, and financial reports (including an accounting for supplies furnished) must be made to the State Board of Health. Inventories of all equipment are also made annually to the State Board of Health. (10) Drugs are furnished free by the State Board of Health to local clinics, and provision is made for the distribution of drugs by local health officers to practicing physicians for the treatment of indigent or semi-indigent private patients. (11) The follow-up services of local health departments are available on request to practicing physicians, and a mode of procedure is suggested as a basis for the transfer of patients from private physicians to clinic and vice versa. Doctors may be requested, also, to refer to public clinics private patients who are unable to complete the prescribed course of treatment because of inability to continue payments.

Case-finding efforts may consist of (1) routine blood-testing of public food handlers, domestic servants, and expectant mothers; (2) the seeking out and the examination of sources and contacts of known cases; and (3) soliciting cooperation of physicians in better reporting. Apart from case-finding activities and provisions for treatment facilities, the local antisyphilis program may include the development of an informed and active public opinion through educational channels, and the development of cooperation by the private physician in administering adequate treatment to their private cases and in locating contacts.

As a prerequisite to selecting new clinic cities, made possible by the Reynolds Fund, local health departments and county medical societies must agree to cooperate with the State Board of Health in making a survey to determine: (1) the percentage of persons infected in the area; (2) the classification of cases as to the stage of illness; and (3) the adequacy of treatment. With such information before it, the State Division of Epidemiology is in a

position to select clinic centers on the basis of relative needs, and to appraise the effectiveness of control measures applied by comparing the status of these diseases from time to time with their status at the time the clinic was organized. All expenditures of funds available for venereal disease control provided by the Reynolds Foundation are made directly by the State Board of Health, and equipment purchased with Foundation funds remains the property of the State Board of Health.

Prophylactic Measures.—From the State's standpoint this service is limited largely to the distribution of biologicals. Free drugs for the treatment of venereal diseases are distributed by the Division of Epidemiology. The Division of Preventive Medicine distributes silver nitrate solution free on request to physicians, midwives, and hospitals, for the prevention of ophthalmia neonatorum among the new-born, and it may purchase diphtheria toxoid for free distribution locally. During the biennium ending June 30, 1938, this Division supplied free toxoid to local health officers and physicians sufficient in amount to immunize nearly a third of the babies born during the period, and silver nitrate prophylactic drops were supplied in an amount sufficient to provide for 83 per cent of the children born during the biennium. The State Laboratory of Hygiene distributes a number of biological products, including: (1) diphtheria antitoxin (a 25 cent charge is made for the container), toxoid, and toxin for schick testing (free); (2) rabies vaccine; (3) antityphoid vaccine (free); (4) smallpox vaccine (free); (5) pertussis vaccine (free); (6) scarlet fever immune serum (sold); (7) tetanus antitoxin (75 cents per outfit); (8) measles prophylactic, etc.

Prophylactic Measures.—The administration of immunization measures in the control of certain communicable diseases is essentially a function of local health departments. Particular attention is being given to vaccination against smallpox, antityphoid inoculation, and diphtheria immunization. Approval of the local medical society may or may not be sought by the health department for immunization procedures carried out by the health staff.

The health officer may circularize parents by letter when an infant reaches six months of age, urging immunization against diphtheria, preferably by the family doctor (the 1939 law makes immunization mandatory). Campaigns for inoculation against typhoid fever are carried out during the summer season on a scheduled basis. During the summer round-up of preschool children and during the health examinations subsequently made of school children, emphasis is placed upon vaccination against smallpox. In this connection, parents may be circularized to the effect that their school children will be vaccinated by health authorities unless a request to the contrary is received from parents.

Those practicing midwifery are responsible for the use of prophylactic drops in the eyes of the newborn. When smallpox occurs in any community, provision is made for free vaccination, by county and municipal physicians and by health officers, of persons not able to pay. Legal provision is also made for free vaccination against smallpox, by the county physician and county health officer, of persons admitted to public institutions (jails, county homes, etc.), but the execution of this law would appear to be neglected. Apart from carrying out mass immunization campaigns against typhoid, diphtheria, and smallpox, special attention is given to the protection of contacts of patients ill with these diseases when local health officers institute isolation and quarantine procedures.

Immunization records for diphtheria, typhoid fever, and smallpox may be kept on forms provided for the purpose by the health department. Questionnaires may be sent to local practicing physicians to obtain a record of children immunized by them. Biologicals used in immunological procedures may be distributed to practicing physicians through the local health officer.

Pneumonia.—Pneumonia is not officially a notifiable disease in North Carolina, and apart from some effort in the field of public education, little is being done directly by the Division of Epidemiology to combat lobar pneumonia. Attention should be called, however, to the Pneumonia Commission which the State Board of Health, with the aid of the State Medical Society and the Medical School faculty of Duke University has established for the study and control of the disease in North Carolina. The Commission consists of 12 physicians, namely: members of the State Board of Health, including the State Health Officer, 5; representatives of the State Medical Society, including the president and secretary, 3; and faculty members of the medical schools within the state, 4. Under the auspices of this Commission steps have been taken to train laboratory technicians who will be available in every section of the State for the typing of pneumococcus organisms and to familiarize the physicians of the State with the efficacy of serum therapy in proper types of pneumonia cases (I, II, V, VII, VIII).

Early in 1938 a short laboratory course of instruction in pneumonia typing and other scientific procedures concerned with the treatment of pneumonia was given for technicians and physicians at Duke University School of Medicine, and a symposium and clinic on pneumonia was held for the benefit of practicing physicians which covered the pathology of the disease; its bacteriology and laboratory diagnosis; its character in infants, children, and adults; empyema and surgical complications; and X-ray diagnosis. Selection of technicians for training at Duke University was limited to candidates holding or eligible to hold a certificate of the American Board of Clinical Pathologists.

Sixty-eight typing stations in 49 communities have been established in the State, and provision has been made with commercial firms to place supplies of serum at strategical points in the State, particularly population centers, so as to make serum readily available to all physicians. Technicians are required to report to the State Board of Health the cases diagnosed by them, type of organism involved, and the main particulars pertaining to the serum therapy administered. With the support of this Commission, it is perhaps not too much to expect that the time is approaching when a section of respiratory diseases may be established within the Division of Epidemiology.

Tuberculosis.—From 1913 to 1923 the State Board of Health was responsible for the State's tuberculosis program, including the institutional care of patients. Except for this period, State leadership has been vested essentially in the Board of Directors of the State Sanatoria. Local government authorities, however, share with the State the responsibility of instituting control measures.

ORGANIZATIONS

State Sanatoria.—The North Carolina Sanatorium for the Treatment of Tuberculosis, situated at Sanatorium, was founded in 1907, and the Western North Carolina Sanatorium for the Treatment of Tuberculosis, located at Black Moun-

County or District Sanatoria.—Counties are empowered to establish and maintain tuberculosis hospitals. One procedure for taking this step is as follows: The board of county commissioners by majority vote or upon petition of ¼ of the

Main Building, North Carolina Sanatorium

Dr. P. P. McCain—Superintendent, State Tuberculosis Sanatoria

WESTERN NORTH CAROLINA SANATORIUM

tain, was dedicated in 1939. The common Board of Directors of these two institutions consists of twelve members, appointed by the Governor and approved by the Senate. The Secretary-Treasurer of the State Board of Health is an ex officio member and the State Treasurer is the Board's ex-officio treasurer. These directors constitute a body politic and corporate and provision is made for its organization including the creation of an executive committee of three members. The directors are empowered to enact by-laws and regulations, to issue bonds (within certain restrictions), to accept gifts for the Sanatorium, etc. The tenure of office of directors is six years, and the membership of the Board is arranged on a rotary basis; vacancies are filled by the appointive authorities. Members are entitled to receive $5 per day for services rendered and necessary travel expenses, including hotel accommodations.

With respect to the operating staff, the directors elect a superintendent—selection being limited to those who satisfy certain specified qualifications. His term of office is two years, but he is subject to dismissal for cause. The duties of the superintendent are prescribed by the freeholders orders an election to determine the will of the people with respect to bonding the county (not to exceed $250,000) for the establishment of the sanatorium. For the maintenance of this institution the county commissioners are authorized to levy a special annual tax (not to exceed 5 cents on $100 property valuation and 15 cents on the poll) but the question of this levy is to be submitted to the voters. The manner of holding elections referred to is specified in the law. Furthermore, provision is made for a board of managers. The county health officer is a member ex officio, and in addition there are five other members elected by the county commissioners. Only one county commissioner can be a member of the board of managers and this member is chairman. Women are eligible for service on the board. The elected managers hold office for four years on a rotary basis, except that the commissioner-member serves for two years (or for the unexpired term of his office). Vacancies are filled by the board of county commissioners. The county commissioners may appoint the managers following the favorable results of a popular election or may defer such appointments

directors, and he is placed in charge of both State sanatoria. Subordinate employees are employed by him, subject to the approval of the directors, and he is empowered to discharge subordinates for cause, reporting such acts to the directors. The average number of employees of the North Carolina Sanatorium is approximately 169, namely: administration, 4; professional care and treatment, 61; custodial care, 68; operation of plant, 8; maintenance of plant, 6; agriculture, 22. The North Carolina Sanatorium has 485 beds, and its average census is 471. An associate superintendent and medical director is in charge of the Western North Carolina Sanatorium. This institution has 140 beds, and an additional wing is being constructed which, when completed, will double its capacity. At present, the total bed capacity of both institutions is approximately 625.

The Directors determine the qualifications for admission of patients to the State sanatoria. Provision is made for the collection of a reasonable cost of the treatment from patients or persons upon whom patients are legally dependent, but patients are not to be excluded on account of inability to pay. The governing bodies of counties and municipalities are authorized to provide for the treatment of bona fide residents with tuberculosis at the State sanatoria, providing the payment does not exceed one dollar per day per patient. Furthermore, facilities are provided for the confinement, care and treatment of convicts with tuberculosis.

With reference to the North Carolina Sanatorium, the legislative appropriation recommended for the fiscal year 1937-38 was $210,628. In addition to this sum, the anticipated receipts were estimated at $85,200. The average population of this institution for the same fiscal period was estimated at 500 patients, thereby, making the annual estimated cost $591 per patient. With regard to Western North Carolina Sanatorium, the State appropriated $250,000 as a building fund for its establishment. For the fiscal year (1937-38) the State appropriation recommended was $72,625 and, in until the sanatorium has been constructed under their own direction. In addition to the maintenance of this institution, the board of managers may be vested with authority to establish the tuberculosis hospital. Other powers of the board of managers include: (1) selection of officers, employees, etc.; (2) the formulation of rules and regulations for the admission and government of patients and for the general conduct of the hospital; and (3) the doing of all things incidental to carrying out the true intent of the law which provides for these hospitals, according to the authority vested in this body by the board of county commissioners. Elected members receive compensation for services upon a per diem and mileage basis. The health officer serves without such compensation. Nepotism is denied. All property is vested in the county. Such institutions are exempt from local taxes. Patients may be admitted and kept without charge or for such payment as may be just in each case; but non-residents are not to be accommodated at less than actual cost.

Other plans for the hospital care of tuberculosis patients of a county are as follows: (1) The local governing body may contract with the board of trustees of public hospitals for the hospitalization of indigent tuberculosis residents in the sanatorium-department of these hospitals; (2) buildings may be erected and maintained at the State Sanatorium rather than in the locality, and the board of county commissioners may levy a special tax and make arrangements with the Sanitorium for the maintenance and care of the county's tuberculosis patients; and (3) county tuberculosis hospitals may be established by resorting to other special legislation which provides: (a) that the question of establishment be decided by a vote of the people; (b) that there be a board of 12 commissioners (3 to be physicians, and 3 women), operating on a rotary basis for a four-year term; (c) that the organization of the board be affected by the election of a chairman and secretary; (d) that the managers adopt by-laws

addition, anticipated receipts were estimated at $27,375.

The Extension Bureau. — Directors of the State Sanatoria maintain an extension bureau, the headquarters of which are at the State Sanatorium. For the fiscal year 1937-38 the expenditures for its maintenance were $22,079, and the average number of employees was nine. The services of this bureau include the operation of field diagnostic clinics, and as a part of its educational activities it issues a publication entitled the *Sanatorium Sun.*

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and regulations for their own guidance and the management of the hospital; (e) that the managers employ personnel for the operation of the sanatorium; (f) that the managers have charge of financial matters including issuance of bonds and the levying of taxes for the establishment and maintenance of the hospital, the supervision of the property of the hospital, and the control of expenditures. The county treasurer is also the treasurer of the board of managers. The sanatorium is erected for the benefit of the residents, but all shall pay in full or part, except paupers, for services rendered by the hospital.

With respect to district tuberculosis hospitals, authority is granted to any group of counties to establish and maintain a hospital for the care and treatment of tuberculous patients. The board of commissioners, by majority vote, or must, upon petition of 5 per cent of freeholders, order an election to determine the will of the people with reference to the issuance of bonds (not to exceed $200,000 for each county in the group) to be used in the establishment of the tuberculosis hospital. If the popular vote is favorable, the board of county commissioners is authorized to levy a special tax (not to exceed 5 cents on the $100 valuation of property and 15 cents on the poll) to provide a maintenance fund for the sanatorium. In the event that the tuberculosis hospital is donated, the board of county commissioners is empowered to operate and maintain the sanatorium without the necessity of an election. In case of an election, the county commissioners arrange for the balloting. Provision is made for a board of managers: two members from each county in the group elected by a majority vote of their respecitve boards of county commissioners and one member at large elected by a majority of the combined boards of commissioners. Membership is open to women. The member at large holds office for two years, and the other managers for four years when two counties combine, or for six years when more than the two counties constitute the group, rotary service of these members being provided for. Managers may be removed for cause, and vacancies occurring are filled by the county commissioners. In addition to elected managers, county health officers serve as ex officio members of these boards. The compensation of members is the same as that provided for county commissioners. The authority of the board includes: the establishment of the hospital; the selection of officers, employees, and attendants; and the formulation of regulations for the administration and government of patients and the general conduct of the hospital. The boards of county commissioners or the board of managers, according to the authority vested in them, have the power to purchase property, to make contracts, to formulate or change regulations for the admission and government of patients, and to do all things necessary to carry out the purpose of the law which provides for these district sanatoria. Patients may be hospitalized without charge or for such compensation as may be deemed proper, except that non-resident patients must pay actual cost at least for their care.

There are at present sixteen county tuberculosis sanatoria in North Carolina, and one (Wilson County) under construction, providing a total of 825 beds, 514 for white patients and 311 for colored (see Table No. 10, Appendix, for data on individual hospitals). Several counties provide custodial care for tuberculosis patients at county homes, and Burr Cottages are being used to some extent. When all facilities for the hospitalization or other institutional care of tuberculosis patients are considered, it appears that approximately 1500 beds are provided for white and 400 beds for colored patients, or one bed per annual death from tuberculosis.

Tuberculosis Facilities for County or District Health Departments.—At present (July 1, 1938) there are forty county health departments and nine whole-time district health departments, having a jurisdiction over 67 of the 100 counties in the State and serving a population of approximately 2,408,430. Tuberculosis control is one of the important features of the programs of these local health departments. Both the health officers and the public health nurses of these units are in an excellent position to integrate their services with those of the State sanatoria. These local health staffs also work in cooperation with the North Carolina Tuberculosis Association. The latter organization sponsors the Christmas seal sale and has committees in all of the counties of North Carolina, except that local tuberculosis associations have been organized in seven counties.

SERVICES

Case-Finding Activities.—The principal measures enacted for the disclosure and registration of cases of tuberculosis are as follows:

(1) Prior to September, 1935, the State Sanatorium maintained a Bureau of Tuberculosis where a register of all cases reported in the State was kept. Since that date physicians and persons in charge of hospitals and dispensaries have been required to report cases to the State Division of Epidemiology, and the State register of cases has been kept in this office.

(2) Through the operation of tuberculosis clinics, new cases are diagnosed and officially reported. For the most part, traveling clinics are administered by the State Sanatorium, but in some instances, tuberculosis clinics have been established locally. With reference to the former, the Sanatorium authorities notify the local health officer in advance when the clinic will be held in his health jurisdiction. In preparation for it, publicity measures are carried out, practicing physicians are interviewed, and home visits are made to tuberculous families. Appointments for patients, contacts, and suspects are arranged on a scheduled basis, and clinics may be held for both adults and children. White and colored patients are received at the same clinic. In operating these clinics, local public health nurses assist the State clinician and the examinations made by him include fluoroscoping the chest of adults, tuberculin testing, and the taking of X-ray films in appropriate cases. History records are made of each patient and a written report of findings is sent to the family physician. Official reports are also made of new cases.

Tuberculosis clinics may be established locally, the county health officer or a local physician performing the functions of State clinician. To qualify health officers and local physicians to assume this responsibility, provision is made at the State Sanatorium for a short period of intensive training—especial attention being given to the use of the fluoroscope. In North Carolina, fluoroscopy is resorted to as a rapid method for screening adult patients. Local clinics are usually scheduled at weekly, monthly, or other regular intervals.

(3) Tuberculosis surveys may also be carried out in an effort to disclose unknown cases. The procedure followed includes: (1) tuberculin testing and (2) and taking of X-ray films of positive reactors or fluoroscoping the chest of adults. X-ray films are sent to the State

Sanatorium for reading, and a charge of $1 may be made to cover the cost involved. Groups surveyed may include the following: immediate contacts to known cases of tuberculosis, persons suspected of having tuberculosis, grade school children, high school children, teachers, domestic servants, etc. In some health jurisdictions, boards of health have passed resolutions requiring the tuberculin testing of school children and teachers at the discretion of the health officer, as well as making X-ray films of positive reactors (except that adults may be fluoroscoped instead of X-rayed). Attention should also be called to State laws requiring the certification of the health of teachers and other employees of the school system, with respect to freedom from tuberculosis or other communicable diseases; in making this certification, the tuberculin test and X-raying of positive reactors are not carried out as a routine procedure.

Home Nursing Care.—An effort is made by local health departments to provide public health nursing services for families in which tuberculosis occurs. To guide the nurse in the performance of her duties, a tuberculosis nursing record form, supplied by the State Board of Health, is carefully followed. On this form is recorded the essential data about cases, suspects, and contacts and also a continuous record of the services rendered these patients, as well as the progress being made by them. This tuberculosis record form is used for all active cases, suspects, and school children with the childhood type of the disease; infant and preschool record forms are used instead of the tuberculosis form for children of these age groups, who are contacts or have the childhood type of disease. Use is made of a small Dennison seal, placed on the upper edge of these record forms to indicate the type of case involved, for example, "S" is written on the seal to denote a "suspect," a "C" for a contact case, "CT" for the childhood type of disease, whereas, a blank seal indicates an active case. Space is provided on the tuberculosis record form for recording essential data about the patient, including results of sputum analysis, physicians orders, clinical condition, etc., as well as the notes of the nurse, covering field visits in behalf of the patient. In order that ample space may be provided for the latter, separate blanks are supplied as "fill-ins," that are stapled to the record as needed.

These records are carried into the field by the nurse. The family folder is used to file the current records, and laboratory reports, when received, are transferred to these records by the clerk of the local health department. When the cases are closed, these records are taken from the family folder and placed in a "closed file."

Hospitalization of Cases.—When it is necessary to send a case of tuberculosis to a State sanatorium, an application blank, supplied by the sanatorium is executed and transmitted to the superintendent of the sanatorium for approval. A part of the information called for on the blank is filled out by the family physician, and the application is also signed by the patient. In the event a patient is unable to pay $1.50 per day for his care, the "financial blank" attached to the application is filled out and certified by the clerk of the superior court of the county of which the patient is a resident. Charity cases, however, are not admitted until written notice from the county or city

authorities concerned is received, to the effect that 50c per day will be paid for the care of the patient. The State Sanatorium admits only cases that are promising from the viewpoint of recovery, and usually there is a waiting list that delays immediate admission. The staff of the local health department may offer their services in facilitating the filing of applications for admission of these patients.

Collapse Therapy.—Because collapse therapy may free the sputa of tuberculosis patients from tubercle bacilli, its use as a public health measure, especially for chronic ambulatory cases, is receiving consideration. Local progress in the use of this important adjunct to other control measures is made possible through the equipment and skill provided by the establishment of local sanatoria.

c. VITAL STATISTICS SERVICE

The Bureau[1] of Vital Statistics was established as a division of the State Health Department on July 1, 1913, with Doctor J. R. Gordon as the first director. The events leading up to this important step were: (a) an enactment of the Legislature in 1881 that provided for the collection of vital statistics at the annual tax listing; (b) the regulation of common carriers in 1893; (c) the establishment of the State Board of Embalmers in 1901; (d) an enactment in 1909 by the General Assembly that provided for the collection of vital statistics in communities having a population of 1,000 or more; and (e) the passage of the Vital Statistics Law in 1913 and an appropriation of $10,000 for its enforcement. In 1915 the General Assembly made the Vital Statistics Law to conform with the National Model Law by requiring burial permits in rural communities. The most recent revisions of the law were passed in 1933; two amendments were enacted, one to regulate the certification of the birth certificates of children, who, through adoption, have foster parents, and the other to authorize the appointment of county health officers as local registrars.

Since the creation of this Division there have been five directors.[2] From 1919 until 1934 the Division of Vital Statistics was frequently consolidated with other services of the State Health Department, namely; epidemiology, the public health educational service, epidemiology and the state supervisory service of county health work, and the State Laboratory of Hygiene.

North Carolina was admitted to the United States Registration Area for deaths in 1916 and for births in 1917. For the five-year period 1933-37 the average number of annual births was 78,288, with an average birth rate of 22.9. The average number of annual deaths was 33,748 with an average general death rate of 9.9.

STATE

Organization

The State Board of Health is authorized by law to establish at the Capitol a Division of Vital Statistics. The scope of the Division's services include birth and death—

LOCAL

Organization

Local registration districts.—Cities, incorporated towns, and townships constitute in the main the local registration district in North Carolina, but the State Board of Health

[1] The term *Bureau* was changed to *Division* in 1931.

[2] Names and tenure of office of these directors were as follows: Doctor F. R. Gordon, 1913-1919; Doctor F. M. Register, 1919-1930; Doctor G. M. Cooper, 1930-1931; Doctor John A. Hamilton, 1932-1934; Doctor R. T. Stimpson, 1934- .

but not marriage or divorce registrations. The Secretary-Treasurer of the State Board of Health is the State Registrar of Vital Statistics. The staff of the Division consists of 20 employees, namely; the Director, or Deputy State Registrar; three stenographers; fifteen clerks; and a punch operator. No field worker is employed by this Division but provision is made for the field inspectors of the Division of Sanitary Engineering to investigate, when called upon by the Director of this Division, alleged violations of the Vital Statistics Laws. There is, also, a statistical consultant on the staff of the Division of County Health Work who visits whole-time health units for the purpose of aiding the clerk, through the health officer, in the further development of the statistical services of these local health departments. Qualification standards have not been established by law for the directorship, but, by custom, physicians receive the appointments. The present Director received specialized academic training to prepare him for his responsibilities. The Division's budget for 1937-38 was $29,764, of which the State appropriated $24,804, less revenue estimates, and the United States Public Health Service, $4,960. The State's appropriation includes a revenue estimate of $3,300 which is expected from the Bureau of the Census for transcripts executed at 3 cents per copy and from fees collected within the State for making certifications. Fines may be imposed for violation of the Vital Statistics Law, but no record is available of the revenue from this source or what use is made of it. The franking privilege is limited to correspondence involving interests of the Federal Government.

is empowered to abolish or consolidate existing districts and to create new districts. The State Board of Health has consolidated the registration districts in 10 counties, thereby making these counties each a single registration district; in Forsyth County, the area exclusive of Winston-Salem constitutes a registration district by action of the Board; there are about 25 instances of a town and township being combined; and there are a few cases in which two or more small townships have been consolidated by the State Board of Health to form a single registration district. There are approximately 1,200 registration districts in the State.

Local registrars are appointed by the chairman of the board of county commissioners and by the mayors of incorporated communities. The State Board of Health is authorized to appoint whole-time county health officers as local registrars of counties or fractional parts thereof. The local registrar must be a resident of the locality served. The term of office is four years, the turn-over is approximately 30 per cent every 4 years, and provision is made for filling vacancies. Inefficient local registrars can be removed by the Secretary-Treasurer of the State Board of Health and this authority is used freely to weed out the unfit. Local registrars are required to appoint a deputy and, when necessary for the convenience of rural people, he may appoint sub-registrars with the approval of the State Registrar. Subregistrars appointed by a local registrar, who is the county health officer, attend only to the registration of deaths. There are between 50-100 subregistrars and over 1200 each of local registrars and deputy local registrars.

Compensation.—Provision is made for the payment to local registrars of a fee of 50 cents for each birth and death certificate properly registered. These payments are made every 6 months by the county and municipal treasurers on the certification of the State Registrar. Such fees are not received by the local registrar, who is a whole-time county health officer, but, in these cases, the payment is made to the local board of health for health services. The total amount of fees paid annually for the services of local registrars approximates $56,000. This estimate does not include fees for the certification of vital statistics records which may be transacted locally by the local registrars and the Registrar of Deeds.

Duties

The Secretary-Treasurer of the State Board of Health has general supervision over both the Division of Vital Statistics and the local registrars, and he is charged with the execution of the provisions of the Vital Statistics Laws. What constitutes violations of these laws are enumerated in the statutes, and provision is made for the State Registrar to receive the cooperation and assistance of prosecuting attorneys, solicitors, and the Attorney General in the enforcement of this legislation. In the discharge of his duties the State Registrar operates through the staff of the Division of Vital Statistics.

The Division supplies the blanks and forms used in registering, recording, and preserving the returns. The contents or itemizations of both the death and birth certificates are prescribed in the law. Stillbirth (uterogestation 5th month or over) is registered as a birth and death.

The Division takes such steps as may be necessary to make the records complete and satisfactory. Deaths under one year are checked against births reported. Neighborhood inquiries are made by local registrars. The collection of data regarding deceased persons is provided for through regulations covering sales of caskets. Persons in charge of premises for the burial of the dead are required to keep a record of all bodies disposed of and this record is open to official inspection. Institutions to which persons resort for treatment of disease or confinement, or to which they are committed by law, are required to keep a record of such inmates as directed by the State Registrar. The Division estimates that birth registration is about 92 per cent complete and death registrations, 95 per cent. The Census Bureau's postal card check of birth registration, carried out in 1934, showed 88 per cent completeness, but a check made by the Division on this method led to the conclusion that the birth registration was actually higher.

The Division carries out such transactions as are involved in ar-

Duties

The local registrars are charged with the responsibility of enforcing the provisions of the Vital Statistics Laws in their registration districts. The duties of the local registrar as to the certification of births and deaths are enumerated in these laws.

The undertaker files the death certificate with the local registrar and is responsible for collecting the statistical particulars and other information called for on the blanks used. On the basis of the certificate of death or a transit and removal permit, the local registrar issues to undertakers a burial permit, which is required before interment is permitted. Undertakers deliver such permits to the sexton for endorsement and then return them to the local registrar. Where there is a local medical health officer, deaths occurring without medical attendance are referred to him for certification by the local registrar, but when such a death is thought to be caused by unlawful means, he notifies the coroner and an inquest is held. The State Registrar informs local registrars what diseases are dangerous to public health in order that precautions may be taken to prevent their spread. When death results from such specified diseases a permit for transportation of the body by common carrier may not be issued by the local registrar until a certificate of the cause of death and instructions for the proper preparation of the body have been received from the local board of health or other proper authority. Provision is also made for the certification of births to local registrars within five days, and for the execution of supplemental reports for the given name, when omitted from the original certification.

Local registrars transmit on the 5th of each month to the State Registrar all original birth and death certificates registered by them for the preceding month, deposit with the Registrar of Deeds a record book of births and deaths registered by them during the year not later than February, and deliver, on or before the fifth of each

ranging, binding, and permanently preserving the certificates. Card index files (Russell Soundex System) of them are prepared in duplicate and maintained, one being a photostatic copy which is kept in the vault. Provision is made, as required by law, for the storage of vital statistics records in a fire-proof vault, except that the present facilities for the protection of the windows would appear to be open to question. Provision is also made whereby birth and death records collected by churches, historical societies, etc., which may be of value in the establishment of genealogy, may be filed, indexed, and preserved by the State Registrar. Whereas the official registration of births and deaths on a State basis goes back to the year 1913 and on a municipal basis to 1909, the registration of certain cities of the State (Raleigh, Charlotte, Wilmington, etc.) antedates such registration a number of years, but these early records have not been transferred to the custody of the Division, nor have transcripts been made of them.

The Division executes transcripts of birth and death certificates, and provision is made for their acceptance as prima facie evidence in courts. The fees collected for this service are turned over to the treasurer of the State Board of Health. Records obtained from churches, historical societies, etc., are open to public inspection, subject to regulation by the State Registrar of fees prescribed by law. It is not the custom of the Division to charge fees for the verification of data or to make charges for data required by the school or welfare organizations. Information on vital statistics and certification of records pertaining to World War veterans are furnished to officers of the American Legion. The court may decree and order the Division to change the name on the original birth certificate to a new name and to issue upon request a certificate bearing the new name of an adopted child. The name of the foster parents, age, sex, and date of birth, but no reference is to be made in any certified copy as to the adoption of the child. In such cases the original registration of the birth remains as a part of the record in the Division.

month to whole-time county or municipal health officers such data from birth and death certificates filed with them as the State Registrar requires. A form supplied by the State is used for this purpose. Such forms are placed in the unit's correspondence files for ready reference to names and addresses and for furnishing basic data from which local analyses of births and deaths are computed. The character of such analyses varies somewhat for the several local health departments in the State, but minimum requirements are at present being evolved by the statistical consultant of the Division of County Health Work and the Director of Vital Statistics.

The original birth and death certificates do not pass through the hands of the local health officer, except in the few instances, where the local health officer is also the local registrar for the jurisdiction he serves.

Marriage Registration is a function of the Register of Deeds. The law prohibits the issuance of license to marry, to either a male or female applicant, unless the applicant shall present to the Register of Deeds a certificate executed within seven days from the date of presentation showing that, by the usual methods of examination made by a regularly licensed physician, no evidence of any venereal disease in the infectious or communicable stage was found. Such certificate must be accompanied by the original report from a laboratory approved by the State Board of Health showing that the Wassermann, or other approved test, is negative. Furthermore, such certificate must state that no evidence of tuberculosis in the communicable stage was found, that the applicant was found not to be subject to epileptic attacks, and is not an idiot, an imbecile, a mental defective, or of unsound mind.

d. SANITARY ENGINEERING

For a number of years after the establishment of the State Board of Health the State Health Officer, with the advice and assistance of the engineer-member of the Board, carried out sanitary measures as a part of the more or less generalized program of the State Department of Health. As time passed, the need for the establishment of a specialized engineering service became more apparent. The transition step in organization was taken about 1910 when a Bureau of Engineering and Education was organized within the State Department of Health and Warren H. Booker, an engineer, was made director. In 1918 this Bureau was discontinued when the Director went to France to serve with the Red Cross. For a time thereafter engineering problems were again referred to the engineer-member of the Board, but in 1919 a specialized engineering service, the Bureau of Engineering and Inspection, was reestablished under the direction of an engineer, H. E. Miller. When the State Board of Health was reorganized in 1931, the Bureau of Engineering and Inspection became the Division of Sanitary Engineering, and Mr. Booker, who in the meantime had returned from France, was elected to succeed H. E. Miller as chief of this service.

Education of the public in matters of sanitation was undertaken shortly after the beginning of the State Board of Health's existence. As long ago as 1879 a pamphlet was issued dealing with drainage, drinking water, and sanitary engineering. Early attention was also given to municipal water supplies, legislation being enacted in 1893. In 1896 John G. Chase, the engineer-member of the Board, inspected all of the municipal plants in the State, and in 1909 the General Assembly passed legislation which required all public water companies to file plans and specifications of their plants with the State Board of Health and also authorized the State Board of Health to enact rules and regulations for the care of public water sheds and plants. Attention to the seriousness of problems of rural sanitation was brought more and more to the foreground as the Board's engineering program developed—more particularly as the sanitary campaign against hookworm disease progressed in the State. In 1917 and 1919 important legislation was passed pertaining to rural sanitation, and in recent years this program has been greatly accelerated due to the development of Federal relief projects within the State.

In 1916 an optional system of hotel inspection was put into operation, and in 1917 the General Assembly passed legislation which provided for the sanitary inspection and conduct of hotels and restaurants. In 1923 a plan for the more adequate control of public milk supplies was formulated, and during the same year, the Legislature enacted a law which provided for the sanitary manufacture of bedding.

STATE

Organization

Division of Sanitary Engineering.—Legal provision is made for the State Board of Health to organize and maintain a Bureau of Sanitary Engineering and Inspection. At

COUNTY OR DISTRICT

Organization

Local Sanitary Officers.—Local sanitary officers employed in North Carolina numbered 101 as of April 30, 1938, and these fall into four grades, namely, sanitary engineers,

present the personnel of this Division consists of 33 employees, namely:

The Director	1
Principal assistant	1
Divisional engineers	3
Other engineers	7
Bedding inspectors	2
Sanitarians	13
Clerical assistants	6

For administrative purposes the State is divided into an eastern, a central, and a western section with a divisional engineer in charge of each. These engineers supervise the operation of water and sewage plants in their respective districts. Malaria control activities engage the services of 4 engineers, and milk sanitation of 2; and an additional engineer functions as a draftsman and collaborates with the Federal Housing Administration. Privy sanitation requires the services of five sanitarians, and the supervision of hotels, restaurants, and cafes, of eight—two of the latter have responsibilities with reference to the shellfish industry. Other engineers outside this Division employed by the State Board of Health are:

Division of County Health Work	1
Division of Epidemiology	1
Division of Industrial Hygiene	1

The Division's budget (1937-38) totaled $74,107.00, of which the State provided $69,507.00 and the United States Public Health Service, $4,600.00:

	Amount	*Per Cent*
Salaries	$45,712	62
Travel	24,620	33
General expense	3,775	5

Included in this budget is the Bedding Law Fund:

Expenditures	$ 7,775
Revenue (est.)	10,000

Fees collected by the State Board of Health for the labeling and tagging of bedding constitutes the "Bedding Law Fund," which finances the enforcement of the Bedding Law. Up to 20 per cent of this fund may be used for the general expenses of the State Department of Health. An annual license fee of $25 is charged for the operation of a sterilizer, and an annual fee of 9, sanitarians 17, sanitary officers 67, and veterinarians 8.

Distinction.—(1) Engineers hold a B.S. degree in engineering; (2) sanitarians have had at least 3 years of college work and are usually graduates, but not in engineering; and (3) sanitary offiicers include sanitary employees exclusive of sanitary engineers and sanitarians.

Selection.—The Division of County Health Work guides local health officers in the selection of sanitary employees. A prerequisite requirement for the consideration of applicants is the educational background referred to above, and a maximum age limit of 35 years for those who have not had specialized training. There are usually some 250 applications on file for such positions and candidates with the best qualifications are carefully selected. Groups of these are required to take a course designed for them at the University of North Carolina, providing they have not had adequate specialized training previously to fit them for their responsibilities. Such trainees receive from the State Board of Health a stipend ($90 per month for single men and $100 for married men). To be eligible for a permanent appointment the trainees must complete this prescribed course of training satisfactorily.

Plant Operators. — Municipal water plants and systems of sewerage are in the charge of local plant operators—one employee functioning in both capacities in some communities. The majority of plant operators are technically trained, but some untrained men remain from former years. Field engineers of the Division of Sanitary Engineering act in an advisory capacity to these plant operators. Annually a Water Works School, which convenes for approximately five days, is conducted by the North Carolina State College for the benefit of these operators. This School is sponsored by the Division and also the League of Municipalities. Furthermore, a two weeks course is given to plant operators of sewer-

$25 is required to manufacture mattresses.[1]

age systems at the University of North Carolina.

Sanitary Districts. — The State Board of Health is authorized to create local sanitary districts without regard to county, town, or municipal lines, except that inclusion of a municipality is dependent upon the request of the governing body of a municipal corporation. To take this step, at least 51 per cent of the resident freeholders petition the county commissioners, setting forth the boundary and objectives of the proposed sanitary district. Before passing upon the petition the board of county commissioners arrange for public hearings, and in the event the land affected lies in more than one county, the hearings are to be held before a joint meeting of the boards of county commissioners concerned. If approved, the chairman of the board of county commissioners transmits the petition to the State Board of Health, and this body, after holding a public hearing within the proposed district, may, if deemed advisable, pass a resolution creating the district, giving it a name or number. Industrial plants and contiguous villages may arrange to be excluded from the sanitary district by filing an application to this effect. Sanitary districts are incorporated and are governed by a sanitary district board. This board consists of three elected members who serve for a term of two years or until their successors qualify. Provision is made for the returns of elections, for the organization of the board, for the removal of members, and for compensation for their services on a per diem basis. Vacancies, should any occur, are filled by the county commissioners. The board is a body politic and corporate, which is granted certain powers, namely:

(1) To provide for, and operate under the supervision of the State Board of Health, a sewerage system, a water supply system, and such other utilities as may be necessary for the health of the public;

(2) To carry out mosquito control projects for the suppression of malaria with the approval of the State Board of Health.

(3) To make rules and regulations necessary for the proper functioning of the works of the district.

(4) To retain an engineer to make reports on the problems of the district, to provide plans and to supervise work undertaken; to hire employees and fix their duties and compensation; and to purchase materials and let contracts for doing work, or to let contracts for both materials and work.

(5) To hold public hearings on the engineer's reports and after final approval of plans, to adopt a resolution which is to be published;

(6) To acquire property and right of way as well as to enter into agreement with owners of existing utilities;

(7) To finance its lawful business affairs, to determine annual funds needed, to levy property taxes, to meet the financial obligations incurred, to apply service charges and rates, to issue certificates of indebtedness or to borrow money, and to enter into certain contracts with reference to supplying water.

Legal provision is made for voting on bond issues and also for the extension of a sanitary district.

Corporations or residents of a locality may establish a water system or a sewerage system within a sanitary district at their own expense when plans for construction and operation are approved by the district board.

The State Board of Health may also create a sanitary district outside an incorporated town when petitioned to do so by two-thirds of the freeholders. To this end public hearings are held and a commission appointed. Provision is made for the commission to organize and transact business including: (1) adoption of regulations; (2) collection of taxes; (3) the establishment and

[1] Note: Regulations governing the gathering and handling of shellfish stipulate the payment of a fee for the issuance of a certificate of compliance, and provision is made for a charge of $10 to cover second and subsequent inspections, during a calendar year, of crabmeat packing and shipping plants.

maintenance of water supplies and sewerage facilities; and (4) policing the territory of the district.

It is estimated that 25 to 30 sanitary districts have been created, principally in the western part of the State, for the establishment and maintenance of public water supplies and sewerage systems. It would appear that these laws have not been evoked in the establishment of malaria control projects.

Drainage Districts.[1]—A petition for a drainage district is signed by at least a majority of the landowners concerned and filed with the clerk of the superior court. The clerk issues a summons to all landowners who have not signed the petition setting forth a date when the petition will be heard. If a sufficient number have signed the petition a board of viewers is formed by the court. Should this board report favorably with respect to the approximate location of boundaries, feasibility and benefit to public health, etc. the clerk sets a date for a hearing on the board's report. After any objections are settled the court establishes the drainage district and refers the report back to the board of viewers to make a complete survey, plans, estimates of cost, and specifications for the proposed improvements. Lands within the district are classified with respect to benefits to be derived and assessed accordingly. The final report is filed with the court and a date set for its hearing. After the final report has been settled satisfactorily to all parties, the landowners elect three of their numbers as drainage commissioners. The commissioners issue bonds against the lands in the district and arrange for the construction of canals as set-forth in the final report. Drainage projects for the control of malaria are usually developed under the provisions of this law.

Duties

Regulatory Functions.—The State Board of Health has broad powers to enact and enforce regulations deemed necessary for the protection of public health. More specific regulatory responsibilities are frequently enumerated in the laws of the State, as for example:

(1) To make rules and regulations to safeguard the purity of domestic water supplies and to approve plans in relation to public water supplies and the disposal of sewage.

(2) To pass rules and regulations for maintaining privies in a sanitary manner and to prescribe specifications for the construction of privies which are viewed as recommendatory with respect to such matters as exact size, architecture, and dimensions.

(3) To label and tag bedding; to license sterilizing apparatus; and to license manufacturers of mattresses.

(4) To prepare regulations and a score card for hotels and restaurants.

(5) To approve regulations of the State Board of Barber Exam-

Duties

Regulatory Functions.[1] — Local boards of health have broad powers to enact and enforce rules and regulations for the protection and advancement of public health. Regulations pertaining to the control of nuisances are passed by both county boards of health and city councils. County-wide privy regulations have been passed by county boards of health in about twelve counties. These ordinances are more comprehensive in their scope than the State laws concerned, in that the former cover all places where people congregate. Milk regulations based upon the United States Public Health Service Milk Ordinance have been passed by numerous municipal governments and by several county boards of health. In the latter case no attempt is, of course, made to enforce these regulations in strictly rural areas. County boards of health may also promulgate ordinances regulating the sanitary supervision of food handling establishments. Municipal governments enact rules and regulations for administering public water and sewerage systems. City councils also

[1] See Chapter 442, laws of 1909 and subsequent amendments.

iners for the sanitary management of shops and schools, and of the State Board of Cosmetic Art for the sanitary management of such shops, parlors, and schools.

Other branches of the State Government exercise regulatory powers in fields closely related to public health. For example, the Department of Agriculture is authorized:

(1) To establish regulations pertaining to bakeries; and
(2) To make regulations for the Dairy Division, in its inspection and control of dairy products.

pass plumbing ordinances. With respect to the latter, there is a State Board of Examiners of Plumbing and Heating Contractors. Plumbers' annual license fees range from $25 in towns with populations of 2,500 to $50 in towns of still larger size.

Furthermore, the North Carolina Fisheries Commission, in 1925, with the cooperation of the State Board of Health and the United States Public Health Service adopted regulations governing the sanitary production of shellfish which conform in general with the minimum requirements of the United States Public Health Service. Then, too, the legislature in 1937 passed the State Building Code, which includes the State Plumbing Code. At present, however, there is no enforcement of the latter, but it is anticipated that the Division of Sanitary Engineering will be selected as the enforcing agent.

Broad Functions and Administrative Policies.—The staff of the Division of Sanitary Engineering is to see that the State laws and the rules and regulations of the State Board of Health pertaining to sanitary matters are executed, except that this responsibility in certain particulars is shared with the sanitary engineer on the staff of the Division of County Health Work for whole-time county and district health departments, and with the engineer on the staff of the Division of Industrial Hygiene for engineering matters pertaining to industrial hygiene. In general, the specialized facilities of the Division supplement the generalized facilities of local health organization in the development of a well-rounded sanitary engineering program for the State as a whole. The vertical plan of administration is adhered to essentially by the Division, i.e., an operating field staff is employed which is directly responsible administratively, through subordinate supervisors, to the chief of the Division. Consultant services to local health officers are rendered by the Director of the Division of Sanitary Engineering and his field staff and by the Sanitary Engineer of the Division of County Health Work. The technical consultant services that are needed by local sanitary employees are rendered by the Division of Sanitary Engineering, whereas, the administrative responsibility for exercising leadership among such local employees in the formulation, execution, and evaluation of sanitary programs is exercised essentially by the Sanitary Engineer of the Division of County Health Work. With

Broad Functions.—The local sanitary officers operating under the county or district health officer are immediately responsible for the formulation, execution and appraisal of local sanitary programs, except that certain specialized engineering services, such as the supervision of municipal water supplies and sewage disposal systems are rendered independently by the Division of Sanitary Engineering. Local sanitary inspectors are supervised through the county or district health officer by the sanitary engineer of the Division of County Health Work, and many avail themselves of the consultative services of the Division of Sanitary Engineering. Operating under the local health officer, the local sanitary officers are immediately responsible for the execution of state laws and the rules and regulations both of the State Board of Health and of local boards of health, except insofar as State laws and regulations pertain to specialized services delegated directly to the Division of Sanitary Engineering.

respect to unorganized parts of the State, the operating field staff of the Division of Sanitary Engineering performs, so far as practicable, services similar to those rendered by sanitary officers attached to local full-time health units.

Supervision of Public Water Supplies.—The State Board of Health is required: (a) to exercise general over-sight and care of all inland waters, and (b) to cause such waters, including surroundings, to be examined for the purpose of ascertaining if they are adapted for use for drinking and other domestic purposes. As stated above, the State Board of Health promulgates rules and regulations to this end and also employs such expert assistants as may be required. As often as deemed necessary by the State Board of Health, samples are collected from public water supplies for analysis by the State Laboratory of Hygiene. Furthermore, the State Board of Health, must consult and advise periodically the authorities of the municipal corporations, private water companies, and boards of State institutions already having, or intending to introduce, systems of water supplies with respect to the most appropriate source of supply, the best method of assuring the purity of the supply, and the best method of disposing of sewage. Such parties are required to submit outlines of proposed plans to the State Board of Health for its advice, and no contracts are to be entered into for the construction of a system of water supply or drainage disposal of wastes until approval of the State Board of Health has been obtained. Not only the plans and specifications for installation of new systems, but also plans and specifications for the alteration and extension of public water supplies and sewerage systems must be submitted to and approved by the State Board of Health before proceeding with their realization.

Public Water Supplies.—Municipalities may establish and maintain water works, and in the administration of them provision is made for: (a) a governing body or board, and (b) the fixing and collection of rates. The community keeps a separate account of the money received from the payment of these rates. Rights in lands and water as may be needed in the operation of water and drainage systems may be acquired, if necessary, by exercising condemnation proceedings. Plans and specifications must be approved by the State Board of Health. Municipal corporations and private companies, selling water to the public for drinking and household purposes are required to take every reasonable precaution to protect it from contamination and to assure its healthfulness. Particular reference in the law is made to the water shed of the stream utilized as a source of supply; inspections of it must be made quarterly in order to safeguard against surface contamination. The residents of water sheds are obliged to carry out instructions given by the municipal health officer or the State Board of Health, and schools and hamlets located on the shed must provide and maintain a system of sewage disposal approved by the State Board of Health.

Local operators of public water works are supervised by field engineers of the State Division of Sanitary Engineering. Where trained operators are employed samples of water are examined by them daily. Otherwise samples are analyzed monthly at the State Laboratory of Hygiene.

In October, 1938, there were 253 public water supplies in operation which furnish domestic water to approximately one-third of the population of the State. All incorporated towns and cities in the State having a population of 1,600 or more are provided with public water systems, and there are only seven towns with a population of 1,000 to 1,600 which have not as yet installed public water supplies and sewerage systems. Furthermore, 89 small towns of less than 1,000 population have public water supplies. Only 28 of the public water supplies are owned privately. There are 101 water puri-

fication plants in North Carolina, and 35 of these are under the control of technically trained operators. Chlorination of the water is provided for when the source of water is from surface supplies, and water from such source is filtered except when obtained from isolated mountain areas. The percentage of population that actually makes use of the public water supplies available varies considerably from place to place. Estimates made of such communities taken at random varied from 35 to 100 per cent. Routinely, samples of water are collected and analyzed monthly in the State Laboratory of Hygiene. Approximately 80 per cent of samples are found to be of satisfactory sanitary quality, but the quality of water distributed to the large towns and cities of the state is almost invariably free from suspicion. More frequent tests are made when there are indications that the water may be polluted.

The number of annual deaths due to typhoid fever decreased from 836 in 1914 to 79 in 1937. Had the 1914 death rate prevailed in 1937, the number of deaths would have been approximately, 1,280. Three water-borne epidemics of typhoid have occurred in recent years, namely: in Wilmington (1911), in Canton (1915), and in Banner Elk (1933).

Private Wells, Cisterns, and Springs. —The Division's activities in this field are essentially limited to educational activities and to rendering assistance to those who seek advice individually.

Private Wells, Cisterns, and Springs.—The improvement of wells, cisterns, and springs is a feature of the program of local sanitarians. They are expected to make sanitary surveys of homes, schools, and places where groups of persons congregate or are employed and to note the status of water supplies in such places. Where the water supply appears to be potentially dangerous, they inquire into the history of the occurrence of typhoid fever and, particularly if the supply is used by a school, a dairy, or a public food establishment, they collect samples of water for examination. Corrections may be effected by having water mains extended, if in the vicinity of a town or a city, or by inducing the owner to carry out such protective measures as safety demands.

Sewage Disposal

a. *Public Systems.* — As in the case of public water supplies, the State Board of Health is required to consult and advise the authorities of municipal corporations or private companies already having, or intending to construct, a system of sewerage, as to the best methods of disposing of its sewage. Such agencies are required to submit to the State Board of Health, for its advice, outlines of proposed plans for new installations or alterations and extensions of existing systems. No contracts are to be entered into until the approval of the State Board of Health has been obtained.

Sewerage systems have been installed in all of the larger towns and cities in which public water supplies are located. In some of the smaller communities which enjoy the conveniences of public water supplies, sewerage systems have not

Sewage Disposal

a. *Public Systems.*—The governing body is empowered to establish and maintain a system of sewerage for a city and to administer its operation by the formulation of rules and regulations. Such work may be undertaken in accordance with provisions contained in the city charter or other local statutes, or under a State law which is regarded as supplemental to these local laws. If it is necessary to obtain proper outlets to extend the system beyond the corporate limits, the governing body may condemn a right of way. Owners of property may be required to connect water closets, bath tubs, lavatories, sinks, or drains with the system of sewerage. When a municipality is to establish a system of sewerage or provide for an extension, the governing body passes a resolution covering the nature of the proposed im-

[1] See also Section on *Sanitary Districts.*

as yet been installed. An objective of the Division, however, is to eliminate privies in such small towns by the installation of sewerage systems as soon as practicable and by the further extension of water and sewer mains. In this way, the scope of the privy program is being limited more and more to strictly rural areas. In 1938 there were 176 municipal sewage treatment plants as compared with 124 for the year 1928, i.e., an increase of 42 per cent over a ten-year period.

It is estimated that about 56 per cent of the sewerage systems of towns and cities of North Carolina are equipped with treatment facilities. In the various municipalities in which sewerage is available, there is a wide variation in the percentage of actual house connections. Studies made in the western third of the state showed variations from 10 to 100 per cent, with the average figure 76 per cent. Studies for the eastern two-thirds of the state show that approximately 62 per cent of the population of communities with sewerage systems are provided with home sewer connections. In at least 6 cities and towns in the State 100 per cent of the homes are connected with sewers. Several other towns maintain that 98 to 99 per cent of the homes are connected to sewer.

provement and the assessment of the cost involved.

Operators of public sewerage systems are frequently under the immediate charge of the local superintendent of water and lights, but the technical aspects of their work are supervised by the field employees of the Division of Sanitary Engineering.

The sanitary employees of county or district health departments frequently are instrumental in obtaining extension of mains or in securing sewer connections.

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b. *Sanitary Privy Program.* — Occupied urban or semiurban residences located within 300 yards of another residence must be provided with sanitary conveniences. It is the duty of the State Board of Health: (1) to recommend specifications for the construction of privies; (2) to exercise oversight pertaining to the construction and maintenance of privies; and (3) to organize and supervise a force of sanitary inspectors to carry out the privy program. After inspection an official notice is fastened to the privies which calls attention to the defects, if any, which must be corrected within a specified time limit, and a placard of rules for the maintenance of privies is also posted. Originally, approved privies were licensed at a cost of 10 cents, but this procedure was found to be inoperable. The use of insanitary privies is prohibited by law.

b. *Sanitary Privy Program.* — Local sanitary employees take orders and see to getting materials on the ground. District supervisors make contacts with W. P. A. workers in counties where such workers are engaged, and keep projects going. In counties that have no W. P. A. workers, the regular program is carried out. The trend now is to furnish constructed privies, the building being done at some central location near where supplies are obtained. The concrete floors and risers of these privies as well as the wooden superstructures are constructed in conformity to the standard specifications of the State.

Since 1933 an intensive program of privy construction has been made possible through the use of Federal relief funds. With the support of CWA, ERA, and WPA agencies, a total of 174,236 privies had been constructed in North Carolina as of July 1, 1939. The State is divided into four districts and a district supervisor is in charge of each. The district supervisor operates under an assistant director of the Division and these employees are paid from funds obtained from the United States Public Health Service. The field supervisors have the cooperation of sanitary officers employed by local health departments. Arrangements are made with the heads of families or owners of residences for the construction of privies on the basis that they supply the materials required and the work of construction be done free by persons on

relief. The materials cost about $15 per privy and the labor about $13. For the biennium ending June 30, 1938, a total of $810,000 was spent for labor in the construction of privies and the owners spent over $938,000 for materials.

Before the work relief privy program was started, the North Carolina State College surveyed 12 representative counties:

	Rural Homes Per Cent
No toilet facilities	33
Insanitary toilets	53
	Per Cent
Unsatisfactory toilets	86
Sanitary toilets	14
	100
Flush toilets	3 Per Cent

As of June 30, 1936, it was estimated that about 20 per cent of the rural homes were sanitated.

Sanitation of Public Institutions.—The State Board of Health is required by law to cooperate with boards of control of State institutions in matters pertaining to sanitation. In general, these duties are delegated by the State Board of Health to the Division of Sanitary Engineering. For example, the State Board of Health has general supervision over the sanitary and health conditions of the State prison, the State farms, and county or State camps, or other places where the prisoners are confined or housed. Convict camps are constructed according to plans approved by the State Board of Health, although the Highway and Public Works Commission is the sole judge of the type and character of such camps without the control of any other department. In recent years considerable progress has been made in the improvement of these jails and camps. In modernizing these institutions, special attention is being given to sanitary conveniences, lighting, kitchen facilities, water supplies, etc.

On a basis of voluntary cooperation the Division is making available its services to public school authorities. The times are opportune for the improvement of sanitary status of schools because of the rapid progress that is being made in the consolidation of rural schools; there were over 1,000 fewer school buildings in 1937 than in 1930. When new schools have been built during recent years, advantage has been taken of Federal relief funds to install sanitary conveniences. Assistance by the Division is rendered engineers and architects in properly designing small sewage treatment plants for use at schools. The present status of

Sanitation of Public Institutions.—Sanitary employees inspect the sanitary condition of local jails, county homes, schools, and other public institutions. Reports upon any unsatisfactory conditions are sent to the appropriate authorities—the county commissioners, the county board of education, etc. Grand jury action is sometimes necessary to compel the improvement of county jails and other public buildings. Schools are inspected by sanitary employees every two or three months, or in some places, every month. Some counties have adopted a system for grading schools according to their sanitary status, and the system of accrediting county schools by the State educational authorities takes the sanitary status of schools into account. Furthermore, teachers, principals, superintendents, and other governing agents having authority over the maintenance, support, and conduct of the public schools must obey the regulations of the board of health for the protection of the health of the district. The county board of education must provide and maintain sanitary privies and supply wholesome water for schools under its supervision. The district school committee, county superintendents, teachers and principals are required by law to cooperate with county boards of education to this end (C.S. 5543-44-45, and 5475 & 76).

school sanitation and the need for further developments is shown by a survey completed in 1937 by the Division. There were roughly 4,200 public schools in the State with an enrollment of about 865,000 pupils; 4,194 schools were included in the survey:

	Per cent of:	
	Schools Surveyed	*Enrollment*
City water supply	18	43
Wells and springs	56	50
Without water supplies	26	7
Rating "fair to good"	40	74
City sewerage	14	36
Septic tanks	16	31.5
Privies	67	32
Without facilities	3	0.5
Rating "fair to good"	61	—

STATE

Control of Stream Pollution. — Major emphasis is being placed upon the establishment of sewage treatment plants. A section of the state law prohibits the discharge of untreated sewage into a stream above the intake of a public drinking water supply. In recent years applications for Federal funds for the construction of sewerage systems have generally been denied unless provision were made at least for primary treatment. No specific legislation has been enacted to prevent the pollution of streams by wastes from manufacturing or industrial establishments. Great interest in the improvement of methods for the disposal of trade wastes and in the abatement of stream pollution is being manifested throughout the State, but as yet, the Division acts only in an advisory capacity with regard to plans pertaining to trade waste treatments.

Milk Supervision.—The supervision of dairy products is legally a responsibility of the Department of Agriculture (C.S. 7251), but this responsibility with respect to public health matters is shared on a voluntary basis with the Division of Sanitary Engineering.

The Department of Agriculture is empowered to adopt regulations for the maintenance of its Dairy Division. Inspections are made of milk depots, creameries, and cheese factories. Attention is given to the accuracy of scales and Babcock testers (which are licensed), and the use of milk containers and the purchase of milk bottles are regulated. The Commissioner of Agriculture is empowered to make tests and settle

COUNTY

Control of Stream Pollution. — County boards of health are given no specific legal authority to exercise control over stream pollution. In defining the duties of county boards of health, however, the law (C.S. 7065) reads as follows: "They shall make such rules and regulations, pay such fees and salary, and impose such penalties as in their judgment may be necessary to protect and advance the public health." This section and section 7071 C.S. probably give local boards ample authority to deal with situations that constitute nuisances or actual health hazards, but not sufficient authority to control stream pollution in general.

Milk Supervision. — Routine bacteriological examinations of samples of milk and cream are undertaken locally. This work may be done in a laboratory provided by county or district health departments, at the laboratory of a college or other institution, or at the laboratory of a water works. Under local milk ordinances every person whose work brings him in contact with the production, handling, storage, or transportation of milk or milk products is required to pass a medical examination. These examinations may be made by the health officer or by a licensed physician approved by the latter.

State inspectors work with local sanitarians in filling in score sheets which are tabulated on milk survey forms by the Division of Sanitary Engineering and sent to Washington for official rating.

A municipally owned and operated pasteurization plant has been in

disputes over the weights or tests of dairy products. The grade and contents of milk and other dairy products are defined in the law. The misbranding of milk and cream is prohibited in units of local government which have adopted the United States Public Health Service Milk Ordinance.

The Department of Agriculture provides for inspection services and enforces the State law which provides that creameries, butter and cheese factories, and places for the manufacture of ice cream, frozen custard, sherbets, and water ices are to be kept clean and in a sanitary condition. To facilitate this, provisions are made for screening washrooms and toilets, suitable appliances for the sterilization of utensils, etc. The Department of Agriculture is empowered to establish standards of purity of such products, to provide for their examination, and to make regulations. Wholesalers pay an annual fee of $20 and retailers $5 to the Commissioner of Agriculture to defray the expenses incurred in the enforcement of this law. This service is not integrated in any way with the health organization.

North Carolina was one of the first states to give attention to the tuberculosis testing of cows, and has been on the accredited list for a number of years. Emphasis is now being placed on the reduction of Bang's disease.

Referring to the Division of Sanitary Engineering, two engineers and nine sanitarians, who work in cooperation with local personnel, are engaged in milk control operations. Points in the program are:

(1) To promote the adoption of the United States Public Health Service Milk Ordinance by local government units. These milk regulations, made more stringent in certain particulars, had, as of October, 1938, been passed by 162 communities of the State, and 56 of these had United States Public Health Service milk rating of more than 90 per cent.

(2) To increase the distribution of pasteurized milk. Before construction is started on new pasteurization plants the Division recommends that the plans be submitted to it for approval. Owing to the small size of many plants which does not justify engaging the services of an architect or engineer, the Division cooperates with these small dealers in the preparation of plans for individual pasteurization plants. To facilitate its work in this direction, a series of stock plans to meet varying needs is being developed.

continuous service in Tarboro, North Carolina, since 1918. Selected producers, approved by the local board of health, sell raw milk to the city. Milk received during the morning is pooled and immediately pasteurized and is distributed to consumers during the same afternoon or the following morning. Cream also is pasteurized and distributed, and butter is manufactured and sold. Any excess of milk is sold locally to producers of ice cream.

It would appear that the city undertook this unique development in order to reduce its high incidence of diarrhea and enteritis. A milk ordinance limited the sale of milk to Grade A pasteurized, and to fulfill this requirement the city was obliged to construct and operate its own pasteurization plant. The local milk ordinance permits private milk dealers to operate in Tarboro, but because the city is able to sell its product at 12c per quart instead of the usual rate of 15c which prevails in North Carolina, it would appear that they have not found competition feasible. The municipal pasteurization plant is in the charge of a full-time manager and the analysis of milk samples is undertaken at the city water works laboratory. The raw count varies with the season of the year, but samples of the pasteurized milk do not exceed 10,000 colonies per cc. Both the equipment supplied by the city and the procedure carried out by the milk employees have been such as to assure to the consumer a product of uniformly high quality. Tarboro has the distinction of being one of the very few cities in the world that requires 100 per cent pasteurization of milk products.

The consumption of pasteurized milk in 1937 was 120 per cent greater than in 1929.

(3) To improve the status of dairy barns and milk houses. Individual attention is given to dairymen with respect to the construction of new, or the remodeling of old, dairy barns or milk houses. Here again stock plans developed by the Division are being found of great assistance.

(4) The promotion of the use of more milk in the interest of better nutrition. As of June 30, 1938, it is estimated that approximately a half pint of milk is consumed daily per capita, whereas in 1935 it was 0.36 pints per capita.

Sanitary Inspection of Hotels, Restaurants, etc.—State laws and also rules and regulations promulgated by the State Board of Health provide for the sanitary control of hotels and restaurants. The Division employs nine inspectors who devote considerable time to unorganized areas of the State. Score cards are in use. Attention is given to toilet facilities, bathrooms, wash bowls, screening, purity of water, lighting, ventilation, the equipment of hotel bedrooms, the status of vermin and flies, tableware, kitchen utensils, garbage, refrigerators, etc. All employees who handle food are required to take an annual health examination, and inspections of establishments are made at least once a year. Proprietors of hotels and restaurants are required to post a certificate which shows the grade obtained—A, B, or C. A sanitary rating of at least 70 points is required in order to continue operating or avoid prosecution. No fees are charged local proprietors to defray the expenses incurred in the enforcement of these laws or regulations. Tourist homes and camps are subject to these regulations.

Sanitary Inspection of Hotels, Restaurants, etc.—Inspectors of the Division of Sanitary Engineering cooperate with the sanitary officers of whole-time local health departments. In these organized health districts the local sanitarians endeavor to inspect hotels, restaurants, and cafes every thirty days. When local sanitary inspectors have become sufficiently expert to score restaurants within 5 per cent of the score assigned by State sanitarians they may be made agents of the State Board of Health, thereby obviating the duplication of local services by State employees.

Supervision of Shellfish Industry.—Prior to 1925 very little shellfish sanitation had been practiced in North Carolina. Because the prevalence of numerous widespread cases of typhoid fever in the eastern part of the United States at that time was ascribed to oysters, regulations governing the sanitary production of the shellfish industry were promulgated. Under the provisions of current regulations oysters, clams and other shellfish are to be taken only from unpolluted water as certified by the State Board of Health, and the establishments for the shucking and packing of oysters, clams and crabmeat are regulated by the State Board of Health. Frequent inspections are made of shellfish shucking and packing plants. Laboratory facilities for the examination of oysters and other shellfish and of samples of water overlying all growing areas are provided for at Morehead City. Moreover, sanitary surveys of the shoreline are made to determine any sources of pollution that would endanger the shellfish-bearing areas, and depending upon findings, fishing areas are restricted. Progress is being made in the improvement of sanitary facilities of buildings in which shellfish are handled.

The Division of Sanitary Engineering works in close cooperation with the Division of Fisheries, Department of Conservation and Development. Inspectional services are carried out on the Carolina coast by a sanitarian of the Division of Sanitary Engineering who has his headquarters at Morehead City. The procedure is as follows:

(1) Annually, those engaged in the shellfish industry make application for inspection on forms supplied by the inspectors.

(2) After these applications have been returned, the establishments are visited and graded on a score-form which has been devised for this purpose. In case the score is not less than 70 points, grade A, B, or C certificates are issued in quadruplet, depending upon whether or not the rating is 90-100, 80-90, and 70-80, respectively, one going to the State, one to the United States Public Health Service, and one to New York. The fourth is posted in a conspicuous place on the packing room wall of the shucking establishment.

(3) Annual health examinations are required of all employees engaged in these plants.

(4) In the large establishments the technique of handling the shellfish is supervised by a person who keeps watch of those who are at work.

(5) If the shellfish are to be sold outside the state the regulations of the United States Public Health Service and those of the United States Food and Drugs Administration must be observed. In cooperation with the latter, regular inspections and laboratory control have been maintained over 14 crab meat packing plants.

(6) Upon completion of shucking house inspections the State Board of Health publishes in the State and local papers the lists of the grades awarded to the various shucking establishments, and consumers are urged to purchase only oysters of the highest available grade.

(7) The State Division of Sanitary Engineering issues free standard plans for the construction of oyster-shucking houses for the average small packer of shellfish in North Carolina.

The present grading system was adopted in 1936, and its use is limited to the enforcement of regulations governing shucking and packing plants. Of the 46 certified shucking and packing plants then in operation, 12 were refused certification while the remaining 34 have made steady improvement in an effort to obtain a grade A rating. It is anticipated that the scope of the scoring program may be extended to include the labeling of all packages of shucked shellfish with the grade and code-marking of the packer; furthermore, that this method may embrace shellfish, crab meat, and sea food canning plants. In addition to shellfish activities, this service surveys herring roe canneries operating in the State.

Inspection of Bedding.[1]—The State Board of Health administers the Bedding Law. The use of materials exposed to infection or of "shoddy" products is forbidden. To remake or renovate articles of bedding that have been used, the materials must be sterilized and disinfected by a process approved by the State Board of Health. Provision is made for labeling or tagging bedding, and such labels are furnished by the State Board of Health at a specified cost. Two bedding inspectors are employed by the Division.

Swimming Pool Sanitation.—There is no State law in North Carolina which regulates the establishment and operation of swimming pools, but several local boards of health have adopted regulations (prepared by the Division), covering design, operation and supervision. Supervisory measures include inspection by sanitarians, laboratory analysis of specimens of water, and reports of the operation of pools from the health standpoint. The Division extends assistance to architects and engineers in such matters as design, and, operating on a voluntary basis, progress is being made in the

Swimming Pool Sanitation.—Some cities and towns have adopted rules and regulations governing the conditions under which public swimming pools may be operated. In other localities regulation of the sanitation of such pools may be limited to the powers granted local authorities under general laws for the protection of the public health. Model regulation for adoption by local boards of health have been prepared by the Division of Sanitary Engineering.

The town of Tarboro, for example, operates an outdoor municipal swimming pool. The pool is

[1] Local health officials do not participate in the bedding program.

matter of approved plans and specifications of swimming pools for use in this State.

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filled with city water which is recirculated through equipment for continuous filtration, chlorination, and cooling of the water. The water is changed completely once a month. The purity of the water is tested frequently at the local waterworks laboratory. Bathers are required to take shower baths and to walk through disinfectant solution before entering the pool. Children are charged a fee of 5 cents and adults 10 cents to use the pool, but season tickets may be procured; they are $5 for adults and $3.50 for children.

Malaria Control, Drainage Work, and Mosquito Eradication. — Far-reaching malaria control drainage projects have been undertaken in North Carolina with funds provided by the Works Progress Administration. The work is carried out under the joint auspices of the State Board of Health and the United States Public Health Service and is part of a major scheme which has for its ultimate objective the eradication of malaria in the southeastern states. Several towns have adopted antimosquito ordinances and employ inspectors during the mosquito breeding months of the year to enforce them. District supervisors of the Division have aided many local health departments in programs pertaining to the application of larvicides and to screening and mosquito proofing. Several towns have been prevailed upon to operate oiling and Paris green dusting crews. During the biennium ending June 30, 1938, malaria control projects were carried out in 56 counties; a total of 704 miles of ditches were constructed and 391 miles of ditches cleaned. An average of 1,690 workers were employed and seven dredgers used each month; supervisory personnel consisted of one assistant State director and four or five district supervisors. Approximately 22 per cent of the cost of this work was borne by the people directly benefitted, and the expense of technical supervision has not exceeded 2 per cent of the total cost. (See also section on Malaria under Epidemiology.)

Malaria Control, Drainage Work, and Mosquito Eradication. — The engineering aspects of malaria control and mosquito eradication in the counties are usually handled by the State Board of Health, working in cooperation with Federal agencies. Upon completion of major drainage projects, canals and ditches may be turned over to local landowners for maintenance. Lesser control projects —involving screening, drainage, oiling, dusting, clearing, etc. — may be carried out wholly with local funds and personnel.

Slaughter Houses and Meat Markets.—Under chapter 244 of the laws of 1937, the State Board of Health is authorized, directed, and empowered to prepare and enforce rules and regulations governing the sanitation of meat markets, abattoirs, and other places where meat or meat products are prepared, handled, stored, or sold, and to provide a system for scoring and for grading such places. State Board of Health regulations were promulgated in accordance with this law in July, 1938. Neither the provisions of the law nor the rules and regulations apply to farmers who raise, butcher, and market their own meats.

Slaughter Houses and Meat Markets.—Some local boards of health have passed ordinances regulating the public health aspects of slaughter houses and meat markets. Inspections are made by employees of county or district health departments in accordance with the provisions of rules and regulations issued by the State Department of Agriculture.

Housing.—The Division is not active in the field of housing. Professors at the State College have been

Housing.—The United States Department of Agriculture is developing resettlement projects in Pender

instrumental in having enacted a building code which includes the Division's recommendations for residential sewage disposal plants. Through cooperation with the Federal Housing Administration the State Board of Health approves the sanitation of residential water supplies and sewage disposal plants as a prerequisite to the granting of Federal loans. The Resettlement Administration has promoted a few model community enterprises in the State.

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and Halifax counties. In the former county, for example, a large tract of lowlands has been drained and divided into 175 thirty-acre farms. The population of this community consists of approximately 800 persons[1] and is known as Penderlea. On each of these farms the government has constructed a small dwelling, a barn, and other out-buildings. The dwellings are equipped with running water and inside toilets. Electricity is supplied and standard equipment includes an electric range, refrigerator, and washing machine. Each household is required to keep a cow and to have a garden. Domestic animals, such as chickens, hogs, and cows are blooded stock. The farmers are required to pay an annual rental of $120, and after the first few years an increment is added so as to retire the indebtedness to the Government at the end of about 40 years.

The community center which is being developed as a part of this project consists of a model school, a public auditorium, a community house, a cooperative store, etc. No hospital or church forms a part of the community center. Civic matters are transacted by aldermen elected by inhabitants of the farm community. The Government constructs roads and assists the farmers with the clearance of their lands. A farm agent is employed in order that his counsel may be available to those operating the farms. The services of a public health nurse are also supplied to this community, and she is particularly active in rendering prenatal and welfare services and in taking care of communicable diseases. Care is taken in selecting the residents of this community, and those who prove unfit are required to leave.

e. Preventive Medicine

Services rendered by the State Board of Health in the field of preventive medicine, except oral hygiene, are administered by the Division of Preventive Medicine. When the State Board of Health was reorganized in 1931, this Division was established through the consolidation of activities pertaining to public health education, school hygiene, and maternal and child health. In 1936 a crippled children's service was added to the scope of the Division's activities.

State

Organization

The personnel of this Division (1937-38) consists of 27 employees, namely:

Director		1
Asst. directors		3
Nurses:		
Consultant	1	
Maternal and child hygiene	8	
Crippled children	3	12

County

Organization

Local services corresponding to those included in the scope of the Division of Preventive Medicine are performed by the personnel of county and district health departments. The health officer, public health nurses, and sanitary officials share this responsibility. Through the cooperation of the Rosenwald Fund a Negro physician is made available for conducting a program in the

[1] At the time of our visit, May 13, 1938.

Nutritionist		1
Clerical staff:		
General	8	
Crippled children	2	10

The Division of Preventive Medicine is directed by the Assistant State Health Officer. In addition to the personnel listed above, the Division provides for half the salaries and expenses of 39 nurses assigned to local health departments and for the fees paid to physicians who render part-time professional services at infant and obstetrical clinics conducted by local health departments. One maternal nurse, financed by a private agent, also operates under the supervision of this Division. Provision is made for secretarial services at orthopedic clinics, and an assistant is assigned to the laboratory as a technician.

field of preventive medicine among Negroes. He works through local health departments, and the scope of his program includes:

1. Lectures on general health, maternal and infant hygiene, school hygiene, tuberculosis and syphilis control, and public health nursing,
2. Professional services at preschool and school clinics,
3. Wassermann surveys in selected groups,
4. A tuberculin survey among children, and
5. Institutes in cooperation with the Department of Public Instruction at summer schools for Negro teachers.

The Division's annual budget (1937-38) totaled $357,271 of which the State provided $151,647 and the Children's Bureau $205,624:

		Amount	*Per Cent*
Salaries			
General	$ 39,571		
Crippled children	44,278[1]	$ 83,849	23
Travel			
General	$ 14,000		
Crippled children	6,600	20,600	6
General Expenses			
General	$ 92,584[2]		
Crippled children	160,238[3]	252,822	71

DUTIES AND SERVICES

1). *Public Health Education*

To gather and disseminate public health information is a legal responsibility of the State Board of Health and constitutes one of the oldest services of the Board. A step toward specialization of this service was taken about 1910 when the State Board of Health created a Bureau of Engineering and Education. Subsequently, health educational work was administered by a special service termed, first, a "Division of Health Education," and later, a "Bureau of Health Education." At present, health educational activities constitute a subsection of the Division of Preventive Medicine—the Department of Health Education. The Director of the Division serves as chief of this Department; he is aided by an Assistant Educational Director. The work of the Director and Assistant Director of this Department is supplemented by directors of other divisions of the State Department of Health who are active in their specialized fields of public health education.

This Department serves as the custodial and distributing agent of the State Board of Health with reference to educational materials. Space is provided

[1] Includes fees for 9 orthopedic surgeons, $33,103.
[2] Includes "County Aid", $51,810; and "Obstetrical and Pediatric Services", $20,000.
[3] Includes "Hospital Care", $151,542 of which the State contributes $110,219 and the Children's Bureau, $41,323.

on the upper floor of the Health Building where printed material is stored and mailed out by clerks employed for the purpose.

The scope of the services of this Department includes:

a. The publication of *The Health Bulletin.* The first issue of this Bulletin appeared in 1886, and the complete set of 54 volumes, which have been published, has been bound. At present 46,000 copies of a 16-page booklet are issued monthly. Each issue contains a leading article, and it is customary to devote certain issues to the same subject matter periodically. For example, the May issue is given over to infant welfare, the September issue to school health matters, and the December issue to old age problems. News items are included in all numbers of the Bulletin, and there is also an editorial column entitled "Notes and Comment." The Bulletin is sent on request to citizens throughout the State. Its annual cost for publication and mailing is approximately $6,000 or about 1c per copy.

b. *A Health Correspondence Service.*—About 15 letters are replied to daily by the Director of this Department. These letters are from citizens of the State making inquiries pertaining to health and medical matters. Since the questions asked do not fall into categories, the use of form letters is not feasible, but in appropriate instances it is possible to use short covering letters in the distribution of stock health literature which supplies the information desired. Owing to the personal attention required, much of the time of the Director is consumed in taking care of this correspondence service.

c. *Pamphlets and Special Publications.*—About 40 kinds of pamphlets are distributed to the public by the Department. All, except those obtained from such outside agencies as the Children's Bureau, are published by the State Board of Health. These pamphlets cover sanitary engineering problems, communicable disease control, maternal and child hygiene, etc. and the subject matter is kept up to date by periodic revisions. *The Health Bulletin* lists the titles, and the local health units play an important role as distributing agents. Furthermore, mimeographed and multigraphed leaflets pertaining to health education are issued annually. During the biennium ending June 30, 1938, nearly 3 million pamphlets and over 3½ million leaflets were distributed through this Department.

d. *Health Lectures and Radio Talks.*—Members of the various divisions of the State Board of Health deliver health addresses throughout the State to parent-teacher associations, women's groups, Junior Leaguers, etc., when requests from such groups are received. The radio station WPTF at Raleigh donates 15 minutes each Tuesday afternoon to the State Board of Health. Over 500 radio addresses, featuring in particular the new developments of the Health Department, have been delivered on a rotating schedule by representatives of the several divisions. Copies of current addresses are mailed on request to interested citizens. The schedule of radio talks is published in the Bulletin for each quarter. Copies of addresses are sent to 6 of the 10 broadcasting stations of the State but customarily only one rebroadcasts these messages. The value of the radio program is attested by the number of letters and comments received from the public.

e. *Biennial Reports.*—There have been 27 biennial reports issued by the State Board of Health. Beginning work about the first of July of even years, the directors of the various divisions prepare sections of this report which cover their particular specialties. Editing of the report is usually done by the Director of this Department, but may be attended to by the State Health Officer. On or before the tenth of December, the report is placed in the hands of the State Budget Commissioner in order that printed copies may be distributed to members of the General Assembly when they meet on the first of January of odd years.

Other educational features of the program of the State Board of Health that should be mentioned are as follows: newspaper articles (see Publicity

Service, Central Administrative Office), the extensive educational program of the Division of Oral Hygiene, the use of posters and charts, the development of a health museum at the office of the State Board of Health in Raleigh, a moving picture service, and the observance of child health day (May Day).

Although not administratively related to the Department of Health, attention should be called to the following agencies which have an educational bearing on health activities in North Carolina:

(a) *The Section on Public Health and Education of the State Medical Society.*—This Section convenes at the annual meeting of the State Medical Society. It has been in existence for forty years, and in former days was termed "State Medicine."

(b) *North Carolina Public Health Association.*—This organization was established in 1911. Its membership consists of health officers, nurses, and sanitary officers. Annual meetings are held, and the proceedings of the Association are published as a part of the Annual Report of the State Medical Society.

(c) *Conferences of Health Officers with the Operating Staff of the State Board of Health.*—Regular annual conferences of local health personnel with the staff of the State Board of Health are not provided for in North Carolina. The State Health Officer, however, may call a special meeting of local health officers when circumstances warrant such a conference.

(d) *Training of Personnel.*—A number of short refresher courses are given, sponsored, or aided by the State Board of Health. Perhaps the most important of these is given by the Division of Public Health of the School of Medicine, University of North Carolina. In 1935 an experimental course was held under the guidance of the Dean of the School of Medicine to prepare physicians for positions as health officers, in order that the needs for trained personnel in this and nearby states might be met. In 1936 a Division of Public Health was established at the University and a director was appointed. This Division is an integral part of the Medical School and was made possible by the cooperation of the staffs and facilities of the North Carolina State Board of Health as well as the Schools of Engineering and Medicine of the University of North Carolina. Instruction for physicians in public health administration extends over a period of twelve weeks. Following this, a month with the field demonstration unit is required for North Carolina trainees. More recently provision has been made in the Department for the training of public health nurses and also of sanitary officers. At the University there is also a Department of Public Health Dentistry designed to better qualify dentists employed by the State Division of Oral Hygiene to teach mouth health in the public schools.

The University of North Carolina has been designated and approved by the United States Public Health Service as the center for the training of health officers for the Interstate Sanitary District No. 2, extending from Delware to Florida. A field demonstration unit has been established in the Orange-Person-Chatham Health District in cooperation with the City-County Health Department of the adjoining county of Durham to afford practical training in rural and urban health administration.

The following courses, except those designed for special groups, are required of all trainees:

Public health administration
The principles and practice of sanitation
Sanitary engineering
Epidemiology
Communicable disease control
Child hygiene
Vital statistics
Public health laboratory methods
Preventive medicine and hygiene

Extra time is given for the instruction of health officers in public health

administration, epidemiology, and child hygiene. Sanitary engineers are given special advanced courses in the more technical phases of sanitary engineering. Scholarships are allotted under the Social Security Act. For completing the work successfully, physicians, engineers, and sanitarians receive a certificate and sanitary officers a diploma. Others receive a letter of attendance. During the biennium ending June 30, 1938, those trained were as follows: health officers, 22; public health nurses, 112; sanitary engineers, 15; sanitarians, 26; sanitary officers, 14; and laboratory technicians, 7.

Reference should also be made to the following additional opportunities for the training of personnel:

1. The State has taken full advantage of funds supplied by the Federal Government and The Rockefeller Foundation to provide fellowships for the training of personnel at schools of hygiene and public health and at schools of engineering. These courses usually cover a nine-month period.
2. The Bureau of Sanitary Engineering and Inspection holds annual conferences for sanitary employees of local health departments. These sessions last 4 or 5 days, and the program includes speakers from both inside and outside the State.
3. In an effort to foster the continuous training of sanitary employees, these officials are encouraged to take the Journal of the American Water-Works Association and the Engineering News Record. Consideration is also being given to issuing a bulletin for sanitarians which would contain selected material for their consumption and references to published articles which would supply information helpful to them in their work.

The county or district health officer has broad responsibilities in the field of health education, namely:

(1) He is required through the county press, public addresses, and in every available way to educate the people of his county to set a higher value on health and to adopt such public and private measures as will tend to a greater conservation of life.
(2) He is to cooperate fully with county educational authorities to the end that children may be better informed in regard to the importance of health and the methods of preventing disease.

The scope of the educational services of county and district health departments includes:

(1) The publication of news items; approximately 7,000 articles were published during the biennium 1936-38. (See section on *publicity service*).
(2) The distribution of health pamphlets, circulars, leaflets, etc. Postal cards may be utilized to notify mothers when their children should be immunized.
(3) The delivery of health addresses by the local personnel to local groups, such as women's organizations, parent-teacher associations, luncheon clubs, school children, church organizations, farm groups. In some health districts facilities are available for illustrating these talks through lantern slides, motion pictures, charts, etc. In one district the health officer makes use of motion picture films which he has taken locally. Radio talks by local health officers are seldom given.
(4) Exhibits and special demonstrations are often shown by health departments. For example, an exhibit lent by the American Medical Association on syphilis was shown at the Edgecombe County Fair.
(5) A number of local health departments take part in observance of the National Negro Health Week.
(6) It is customary for county health departments to issue annual reports covering services which they render. Several of these are printed. Monthly bulletins are not ordinarily issued.
(7) Personal interviews at the offices of health departments, at clinics, and in the homes constitute another valuable feature of the education program of local health officers.

2) *School Health Supervision*

The medical inspection of school children as a State Board of Health enterprise, was initiated in 1915. An employee of the State Board of Health, Dr. G. M. Cooper, was directed to develop this field of activity, and he was assisted by three full-time physicians, who were paid from funds raised locally. During the next two years medical inspection of school children was carried out in 12 counties of the State. During summer recesses the time of the school staff was devoted to typhoid fever campaigns. Legislation pertaining to school health supervision was passed in 1917 by the General Assembly, and on July 1st a Bureau for the Medical Inspection of School Children was established with Dr. Cooper as director. At first 25 per cent of the cost of the school program was borne by the State and 75 per cent was contributed from local or other sources. Dental and tonsil clinics were introduced in 1918 to obviate the difficulty encountered in obtaining the correction of oral and throat defects. In 1919 the Legislature appropriated $50,000 for this Bureau, making it possible to modify the previous arrangements for financing the school health program and to employ dentists and nurses. As the years passed, full-time local health departments made their appearance and relieved the State of the immediate responsibility for the medical inspection of school children in the organized areas of the State. The Bureau, however, continued its services in so far as practicable, in the unorganized counties. In time also, the oral hygiene service was split off from the Bureau and was organized as a separate division of the State Board of Health. When the State Board of Health was reorganized in 1931 the Bureau for the Medical Inspection of School Children became the Department of School Health Supervision of the Division of Preventive Medicine. A staff for this Department does not exist apart from the general personnel of the Division. Doctor Cooper directs the services of the Department, and its field activities are carried out in unorganized counties by public health nurses attached to the Division. The Department shares its responsibilities with other divisions of the State Board of Health as well as with local health units. Furthermore, these responsibilities of the health organization as a whole, are shared with State and local educational authorities. Both organizations are in general agreement that physical efficiency and sound mental health are cardinal objectives towards which public school education should be directed. Much serious thought has been given to the problems involved, but it would appear that progress has been slow in building into the teaching system of the State a practical procedure which is wholly satisfactory.

The scope of the program being developed includes:

a) *Classroom Instruction.*—The State Superintendent of Public Instruction is directed by law to prepare a course of instruction on health education, embracing suggestions as to methods of instruction, an outline of lesson plans, lists of source materials, adaptations of the work to be done in each grade, and the amount of time to be devoted to such instruction. Pursuant thereto, the State Superintendent of Public Instruction has carefully prepared and published a comprehensive syllabus or course of health instruction as a section of the Curriculum Manual. This Manual also contains a chapter on physical education. Elementary school text-books used in the schools are selected by the State Text Book Commission and the State Board of Education but must be approved by the State Board of Health and the faculty of the Medical School of the University of North Carolina. Provision is made legally that adequate time shall be given in all teacher training institutions for the preparation of teachers with respect to the best methods to be utilized in schools in teaching health. Furthermore, it is the duty of local health officers to cooperate with the school system to the end that school children may be better informed with regard to the importance of health and the methods of preventing disease. Through such services as the Division of Preventive Medicine, the Division of Oral Hygiene, etc., the State Board of Health cooperates with the State Board of Education in supplementing the services of teachers in

giving health instruction to the school child. For example, about 14,000 lectures on oral hygiene were given by the Division of Oral Hygiene during the 8-year period 1930-38, and an equal number by the school nurses of the Division of Preventive Medicine pertaining to the general health of school children.

b) *Health Institutes for Teachers.*—The State Board of Health, the State Department of Public Instruction, and the Extension Division of the State College cooperated in the spring of 1938 in organizing health institutes for teachers. A three-hour program was given in 34 centers throughout the State by representatives of the cooperating agencies. Local health personnel and home demonstration agents were invited, and the total attendance was about 8,000. Attention was called to available outlines and text books for regular health courses in the various grades; to the importance of giving a proper allotment of time to health work in the schools; to the need for teachers to insist upon the provision of proper health facilities at the schools; to the role the teacher should play in making regular health inspections of their pupils and in obtaining correction of physical defects of school children; and to the importance of proper nutrition.

c) *The Certification of the Health of Public School teachers and Other School Employees.*—County superintendents of schools, teachers, and other employees are required to file annually in the office of the local school superintendent a certification from the county physician or a private physician to the effect that such employees are free from open tuberculosis or other communicable disease. The county physician renders this service free, and his certification is made on a form supplied by the State Superintendent of Public Instruction and the State Board of Health. Most of these examinations of school employees are made by private physicians. X-ray plates of the lungs are not taken routinely, but physicians can arrange for such services with the State Tuberculosis Sanatorium.

d) *The Detection and Correction of the Physical Defects of School Children.*—On receipt of instructions from the State Board of Health and the State Superintendent of Public Instruction, the teachers are required by law, at least once every three years, to make a physical inspection of every pupil and to enter a record of their findings on a form furnished by the State Board of Health. Legal provision is made for such records to be returned to and received by the State Board of Health, but according to present practice, the records for the large schools are filed at the schools, while those for the smaller schools are filed with the county health officer, or with the county superintendent of schools where health services have not been organized on a full-time basis. The inspection service of teachers is supplemented in appropriate cases by medical examinations which are given by the employees of the health organization. In organized health jurisdictions it is the duty of the health officer to examine those children who have been screened by the teachers for his consideration—i.e., children who the teacher thinks need a more careful examination. The local health officer is also required to examine the feces of school children whom he suspects of having hookworm disease and to carry out a prescribed procedure designed to obtain corrections and treatments of defective school children through cooperation with parents. In counties which do not support whole-time health units, public health nurses employed by the Division of Preventive Medicine cooperate with teachers in making health examinations of school children and in obtaining corrections and treatments of the defective school child. Written notices are sent to those parents whose children, in the opinion of the nurse, should have a professional examination, and the nurse cooperates with parents, physicians, and dentists by making home visits and office contacts in an effort to obtain corrections among these children. To stimulate interest and to obtain public support in her work, the nurse makes reports to civic groups, such as parent-teacher organizations and to editors of newspapers for publication. In both organized and unorganized health jurisdictions of the State the services of teachers, nurses, and health officers are greatly facilitated with

respect to oral hygiene by the school dentists employed by the Division of Oral Hygiene.

With funds obtained from the Children's Bureau a hearing conservation project was begun in the fall of 1937. Of approximately 15,000 school children tested with the audiometer, more than 1,000 showed a hearing loss of 10 to 30 per cent. From the data being collected the relationship between earache, running ears, adenoidectomy, etc. to loss of hearing will be studied. It is anticipated that projects of this kind will bring about many reforms, including lip-reading classes.

Parents of children who appear to have serious defects are required by law to bring their children to a representative of the State Board of Health for a more thorough medical examination, providing the parents do not register objections against their children's receiving school medical services, and providing the distance to come is not more than 10 miles. The execution of this provision of the law was found to be impracticable and no attempt has been made to invoke it for many years. Furthermore, to aid financially with respect to obtaining corrections of defects, other than dental, the law also provides that local governing authorities contribute to the State Board of Health $1.00 per ten pupils enrolled. With regard to financing dental examinations and corrections, the legal provision was made for a special appropriation, not to exceed $50,000, to be set aside from the State school funds for the utilization of the State Board of Health. It appears that the first provision of this law was never operative, and is now obsolete because of the local contributions which are made to budgets of whole-time health units. The latter provision, which pertains to the financing of dental services, was abrogated in 1931 by the State Budget Commission. Hence, these provisions, though still on the statute books, are entirely disregarded.

A rough conception of the physical status of school children in North Carolina may be obtained from the following comments:

(1) From the work done in schools by full-time local health departments for the period July 1, 1934, to December, 1935, the following estimates have been computed with respect to school children who were free from correctible defects.

	Per Cent
Grade children, all races	17
Grade children, white	19
Grade children, colored	14
First grade children, all races	16
First grade children, white	17
First grade children, colored	15
Second grade children, all races	20
Second grade children, white	22
Second grade children, colored	15
High school children, all races	31
High school children, white	30
High school children, colored	27

(2) From the work done in schools by public health nurses operating in 45 unorganized counties for the biennial period 1934-36, the following estimates have been compiled from over 140,000 pupils inspected:

	Per Cent
Pupils under weight	22
Pupils over weight	2
Pupils with defective vision	10
Pupils with defective hearing	1
Pupils with physical defects	80

(3) From data collected by the North Carolina Dental Society while making a survey of approximately 250,000 children in 705 schools on February 20 and 22, 1934, the following analysis pertaining to the status of oral hygiene among school children in North Carolina has been compiled:

	Per Cent
Children needing dental attention	84
Children needing extractions	56.5
Children needing extractions of permanent teeth	11.5
Children with missing 6 year molars	8.0
Children with diseased gums	9.0
Children needing orthodontic treatment	9.3
Children having mottled enamel	7.6
Children never in dental office	55.3

e) *Control of Communicable Diseases in Schools.*—State and local boards of health are vested with broad legal authority pertaining to the control of communicable diseases. The State Board of Health supports a Bureau of Epidemiology, and local quarantine officers are provided to enforce all laws and regulations pertaining to inland quarantine. Local boards of health have authority to require children attending school to present a certificate of immunity against smallpox, and, when smallpox occurs in a community, to provide free vaccination by local health officers for persons not able to pay. The General Assembly of 1939 enacted legislation requiring that all children between the ages of six months and one year be immunized against diphtheria.

A general conception of the status of communicable disease among school children may be indicated by listing the leading diseases as shown from morbidity reports received by the State for the age-group 5-14 during the nine year period 1929-37, namely:

	Approximate Number
Measles	82,000
Whooping cough	36,000
Chicken pox	28,000
Scarlet fever	15,000
German measles	14,000
Diphtheria	10,000
Influenza	5,000
Tuberculosis	2,750
Typhoid fever group	2,350
Syphilis	1,400

Recent surveys show that the prevalence of hookworm infestation is 11.2 per cent for children in the age-group 5-9 and 15.1 per cent in the age-group 10-14 years.

The leading causes of death in North Carolina for three age-groups approximately spanning the school-age, for the 8 year period 1928-35, were as follows:

	Age Group					
	5-9		*10-14*		*15-19*	
Cause of Death	*No.*	*Rank*	*No.*	*Rank*	*No.*	*Rank*
Pneumonia	607	1	437	1	701	2
Motor accidents	422	2	292	3	596	3
Diphtheria	352	3	.....	....	.....	....
Influenza	244	4	180	6	359	4
Tuberculosis	226	5	400	2	1762	1
Accidental Burns	214	6	.....	....	.....	....
Appendicitis	190	7	271	4	335	6
Heart disease	181	8	240	5	359	5
Nephritis	156	9	157	7	212	8
Measles	128	10	.....	....	.....	....
Accidents, drowning	.....	....	139	8	240	7
Accidents, by firearms	.....	....	135	9	172	9
Typhoid fever	.....	....	119	10	168	10
10 leading causes of Death	2720	2	2370	3	4904	1

During the period July 1, 1934-December 1935, the staffs of local full-time health departments Schick tested over 40,000 children (including school children), and 27 per cent were found positive as to susceptibility to diphtheria. Over 18,000 grade children were immunized against diphtheria and over 55,500 were vaccinated against smallpox in health jurisdictions supporting full-time units. Furthermore, from the inspection work among 140,000 school

children by public health nurses operating in unorganized counties during the biennial period 1934-36, it was estimated that about 40 per cent were inoculated against typhoid fever, 22 per cent were vaccinated against smallpox, and 32 per cent were immunized against diphtheria.

f) *Sanitary Inspection of Schools.*—The county boards of education must provide and maintain sanitary privies, and also, supply water for school children. The teachers and principals are required to report insanitary privies to the district school committee (which is required to keep school privies in a sanitary condition) or, to the county superintendent of schools. The district school committee is also required to see that schools have a wholesome water supply and, when this is not the case, to report such circumstances to the county superintendent. The State Division of Sanitary Engineering, also takes an active interest in the improvement of school sanitation. (For the sanitary status of schools in North Carolina, see Sanitary Engineering Service.)

g) *The New Plan for a Cooperative School Health Service.*—The plan involves setting-up a small coordinating agency to represent the interests of the departments of health and education and to be jointly responsible to them. The coordinating agency consists of an advisory committee and a full-time operating staff, the latter under the direction of a State coordinator of school health education and school health services. The advisory committee is composed of two ex officio members, representing the State Department of Education and the State Department of Health, respectively, and three appointive members representing, respectively, the State Medical Society, the State teacher training institutions, and physical education interests. The functions of this committee are to act in an advisory capacity to the coordinator, and its individual members are expected to guide and assist him as technical experts in the formulation and execution of a unified school health program.

The full-time coordinating staff consists of a coordinator, a nutritionist, a physical education adviser and an assistant, a white nurse, a colored physician, a colored health educator, and two clerical assistants. The coordinator assumed his responsibilities on July 1, 1939. To make it possible to establish this organization and to inaugurate a program, the General Education Board and the International Health Division of the Rockefeller Foundation made a supplementary grant to be expended over a five-year period.

The scope of the activities to be undertaken by the coordinating agency will not include the performance of any of the duties for which local education or health personnel are responsible. Expressed in simple terms, four principal objectives will be sought: (1) adequate provisions in the teacher-training institutions to train teachers to teach health, and the provision of facilities for giving similar training to in-service teachers in the public schools; (2) provision in elementary and high schools for the teaching of scientific facts concerning health and practical methods of applying this knowledge in the everyday lives of the pupils—this will include both subjective and objective teaching—the aim being to have pupils "practice today what they learned yesterday, with the hope that it will become a habit tomorrow"; (3) the application of protective health measures by the school health personnel in such a way as to take advantage of every opportunity for objective teaching; and (4) extension of these teachings and practices into the homes of the pupils through cooperation with parents and with civic organizations in the various communities. In the realization of these aims, the purpose of the coordinating agency will be to help mobilize existing facilities which, through careful planning, will be able to execute an effective program with the available local personnel. The attitude of the central operating agency will be that health education and health service in the public schools constitute a cooperative enterprise, and that the establishment of a unified, well-integrated program that will meet the essential needs of various localities will be a service of inestimable value to the entire State.

3. *Maternal and Child Hygiene*

In 1916 a unit of child hygiene was developed with the aid of the Children's Bureau; two employees worked for eight months in the counties of the State. In 1919 the infant hygiene service was reorganized with the aid of the American Red Cross to include public health nursing, and the expanded service was termed the Bureau of Public Health Nursing and Infant Hygiene. When the American Red Cross withdrew its support in 1922 this service was again reorganized with the assistance of Federal funds made available by the Sheppard-Towner Act for the promotion of the welfare of mothers and infants, and termed the Bureau of Maternity and Infancy. At present this service is administered as a Department of Maternity and Infancy of the Division of Preventive Medicine.

Cooperating with this Division, the National Council for Mothers and Babies, representing 58 national organizations, has recently selected North Carolina as a proving ground to test the value of the Council's services in its field of interest. The Council functions as a clearing house and coordinating agency for its member organizations in the development of an integrated program. After appraising the needs of the State the resources of affiliated units, in so far as practicable, will be pooled in support of North Carolina's maternal and child welfare program. A conference was held on February 15, 1939, under the sponsorship of the State Advisory Committee to the maternal and child hygiene program, the membership of which is entirely outside the State Health Department. The purpose of this conference was to arouse the interest of affiliated organizations and to develop a plan for cooperating with the State Division of Preventive Medicine.

The Department is in the charge of the Director of the Division of Preventive Medicine, who has the assistance of a subordinate staff including: a consultant nurse, a nutritionist, and eight public health nurses. Formerly, the primary interest of the Department was the development of local maternal and child hygiene programs in unorganized areas of the State, although the cost of the services of about 16 nurses attached to local health departments was borne by this Division.

In July, 1937, the administrative policy of the Division was changed, emphasis being transferred from unorganized areas to counties or districts wherein full-time health departments were in operation. With this change all of the nurses, except the eight referred to above, were given generalized nursing assignments, including maternal and child health, with local whole-time health departments. Under this plan the nurses became integral parts of local health staffs and their services are administered by the respective county or district health officers in cooperation with the Divisions of Preventive Medicine and County Health Work. The Division of Preventive Medicine currently supplies more than $50,000 to provide local nursing services, and an additional $20,000 to strengthen local obstetrical and pediatric services by the employment of practicing physicians to make medical examinations at about 150 maternal and child health centers, established in more than 40 counties of the State. These local physicians receive honoraria ranging from $10 to $75 per month, depending upon the amount of time they devote to this work. These centers, which are open only to the poor, are visited periodically by a medical representative from the Division of Preventive Medicine.

During the biennium, 1936-38, nearly 13,500 new expectant mothers, of whom 16 per cent were white, attended the clinics; and nearly 22,000 infants, of whom 26 per cent were white, were registered. Toxic conditions were reported in more than 4,000 women, and a large majority of women with positive serological test for syphilis were undergoing treatment before the termination of pregnancy. Nearly 800 of the women attending the centers were sent to hospitals for delivery. About 20 per cent of the white and 30 per cent of the colored babies were found to be malnourished.

The eight nurses retained on the staff of the Division of Preventive Medicine have been specially trained to undertake field work in the department

of school health supervision in cooperation with local health and education officials, and midwife control work in unorganized counties. The supplementary school health services rendered to local departments have frequently been the means of converting an indifferent service into a highly effective one. In some instances it is necessary to lend the services of one of these nurses to a local department for a year or more.

a) *Nursing Supervision.*—For purposes of nursing supervision the State is divided into two parts. The nursing consultant of the Division of Preventive Medicine is placed in one of these divisions and the consultant public health nurse of the Division of County Health Work in the other. Apart from 2 or 3 nurses supported from private funds, there are 198 nurses operating in full-time health districts. For the most part, these nurses carry on a generalized nursing program, so that only a part of their time is devoted to maternal and infant work. Where there is more than one nurse in a local health department, the health jurisdiction is divided into subdistricts and a nurse is assigned to each. These district nurses are encouraged to keep a public health nurse's calendar and appointment book to aid them in planning their work in advance. Field trips are so planned that all the services a nurse is responsible for are attended to while she is in a particular neighborhood, even though a day may be required to complete the calls she has scheduled.

Instructions are given local public health nurses by the State consulting nurses with reference to the planning of a public health nurse's program. To this end a mimeographed memorandum entitled *Outline for Planning a Public Health Nurse's Program* has been prepared. Full instructions in the form of a memorandum entitled *Public Health Nursing Bags* have been prepared for the guidance of field nurses covering such matters as equipment, techniques, etc. Supervising nurses endeavor to visit local health departments twice a year, spending at least a day with each nurse. On these occasions the supervising nurse inspects the records kept and works in company with the nurses in carrying out routine services.

The State plan for supervising local health nursing services also includes group conferences and institutes. At convenient meeting places over the State groups of local public health nurses are called in conference with a State supervising nurse for the purpose of reviewing local programs and of discussing current problems. Maternal welfare and syphilis institutes have also been held. The scope of the former covered prenatal and postnatal care and the control of midwives. The sessions, conducted by Anita Jones, lasted for two days. Six syphilis institutes have also been held in various parts of the State, conducted by a Regional Consultant of the United States Public Health Service and the Director of the State Bureau of Epidemiology. At each of these sessions which convened for two days, the role of the public health nurse in the State syphilis program was discussed. An excellent opportunity is also afforded public health nurses to keep abreast of recent developments in their field of service by the annual meeting of the North Carolina State Nursing Association. This organization convenes each October for a three day session, and its public health section is particularly outstanding. Furthermore, the State lends its influence in elevating the eligibility standards of local public health nurses. Such standards include: graduation from high school and training in a nursing school which is affiliated with a hospital that has at least 50 beds. Promising nurses may be given the advantages of a four-month public health course at Richmond, Peabody, Columbia, or Michigan and a month's practical experience at the University of North Carolina.

b) *Maternal Hygiene.*—The objective of this service is to safeguard the health of pregnant women from the hazards of child bearing. The scope of services rendered includes:

(1) *Prenatal Care.*—In the best operated local health jurisdictions of this State not more than 25 to 30 per cent of pregnant mothers receive prenatal

care as a public health service, and the large majority of these mothers are colored. Cases of pregnancy are reported to the health department by attending physicians or midwives and also by lay people concerned or interested. Such cases also come to the nurse's attention as she goes about her routine activities. Because the staff of public health nurses is usually inadequate, it may be necessary to limit the cases selected for supervision to those most in need and to give special attention only to those showing complications. Home visits are made by the nurse, and prenatal centers are operated in most of the whole-time health jurisdictions. Monthly contact with expectant mothers, either in the home or at the clinic is made routinely. In some health jurisdictions mother's classes or conferences are held, and for this purpose the mothers may be assembled an hour before the clinic opens. Pamphlets entitled *Prenatal Care or The Expectant Mother*, or both, and a series of 9 monthly Prenatal letters may be mailed to appropriate persons from the Division of Preventive Medicine on request. The examinations by local physicians rendering professional services at prenatal clinics include pelvic measurements, blood pressure readings, Wassermann tests, etc. On an average, clinics are held once a month, and the place selected may be a church, school, midwife's home, doctor's office, etc. If the patient is under the care of a physician, the nurse carries out the physician's orders in making field visits, but if the patient is being cared for by a midwife, the nurse is free to carry out the routine procedure approved by the health department. The public health nurse is on the lookout for untoward symptoms, advises expectant mothers regarding diet and hygienic care and helps them to arrange for delivery and to prepare the layette for the baby. Records are kept of all prenatal services rendered (see below).

(2) *Obstetrical Service*

Supervision of Midwives.—About one-fourth of the pregnant women of the State are delivered by midwives.

Midwives are required to register their names and addresses with the Secretary of the State Board of Health annually, and no person is permitted to practice midwifery in the State except upon a permit granted and issued by the State Board of Health. Such permits are issued annually to appropriate persons free of cost. Failure to register, or practicing without a permit, is a misdemeanor. The State Board of Health is empowered to adopt and enforce rules and regulations governing the practice of midwifery in the State, but nothing in the law is to be construed to interfere with or supplant the authority of local health officers over the practice of midwifery and any county not desiring to remain under the provisions of the act may withdraw therefrom.

Legal provisions are made for the State to furnish a prophylactic against ophthalmia neonatorum to physicians, midwives, and hospitals, and for giving instructions for its use. Three thousand dollars is to be appropriated annually for the control of ophthalmia neonatorum. Failure to instill the solution into the child's eyes within two hours after birth is a misdemeanor. Fines for violations of this law are to be paid into a special fund set up by the State Treasury.

The midwives operating in counties with organized health departments are assembled annually by the local health officers. At these meetings an educational program is carried out and the midwives are given a health examination by the health officer. Midwife class material is provided by the division to be utilized in drilling midwives in the fundamentals of their calling at these conferences, and useful educational literature, such as the pamphlet entitled *Instruction for North Carolina Midwives*, is distributed among them. During the biennium ending June 30, 1939, about 75 per cent of the midwives were seen; 225 midwife meetings were held; and nearly a thousand home visits were made to midwives who did not attend meetings. It is estimated that there are about 3,000 midwives at work in the State, of which about 2,200 have official permits to practice.

Records.—Midwife record forms supplied by the State Board of Health for keeping the record of medical and nursing supervision of each midwife are as follows:

Record A discloses the status of equipment provided by the midwife when inspected by the nurse from time to time. Space is also provided for recording annual examinations of midwives over a 4-year period. The standing of the midwife—Grade A, B or C—is noted.

Record B provides space for recording in code the midwife's cleanliness with respect to person and equipment, and allows space also for noting if the midwife is cooperative or not. On this form the nurse may record field visits and enter notes and comments regarding the midwife.

Record C is the nurse's work sheet for each midwife. Entries are made for each patient taken care of by the midwife.

All of these records, together with the Social Data Sheet, are kept in salmon colored family folders. These records are carried into the field by the nurse when she visits midwives. In the office, such records are filed alphabetically in the same box files as are used for other family folders.

(b) *Provisions for Improvement of Obstetrical Practices.*—In 1935, with the assistance of the Children's Bureau, series of postgraduate lectures for physicians were given in the 10 councillor medical districts of the State by obstetricians of national reputation.

No nursing service by public health nurses are rendered physicians at the time of parturition, nor are sterile obstetrical packs furnished for use by physicians in home deliveries. Not more than 25 per cent of pregnant women are delivered in hospitals.

The Northampton County Obstetrical Nursing Demonstration.—Through financial support from the Children's Bureau, the Division of Preventive Medicine is supplementing the nursing staff of the Northampton Health Department in order to make it possible for the public health nurses to aid midwives at the time of parturition. The objectives of this demonstration are: 1) to evolve a practical plan of procedure whereby maternal welfare services are improved through the cooperation of public health nurses with midwives in rendering obstetrical services at the time of labor; 2) to evaluate what effect such cooperation between nurses and midwives may have on such indices as maternal and infant mortality; and 3) to take steps in gradually introducing the plan evolved into other districts, providing this demonstration proves satisfactory. Nurses in this area operate under a county supervising nurse through the county health officer.

Apart from the demonstration in Northampton County attention should also be called to plans in other counties for the supervision of midwives by nurses trained in midwifery, as for example, the District Health Department of Orange, Person and Chatham Counties and the Health Department of Moore County. Both of these local health departments employ nurses trained in midwifery as midwife supervisors.

Postnatal Care.—The occurrence of a birth may be reported to the nurse by a physician, a midwife, or a member of the family. If the home is in an isolated section of the health district, the nurse may be informed by mail. Whereas frequent postpartum visits may be made by the nurses in urban sections, three or four nursing visits may be as many as a nurse can manage during the six weeks following labor in many of the rural communities.

Records.—A maternity record form, supplied with instructions by the State Board of Health, is used in recording nursing and medical services rendered to antepartum and postpartum cases. The form provides for a summary of previous pregnancies, menstrual history, history of diseases, pelvic measurements, urinalysis, special tests, physical examinations, antepartum visits, postpartum visits, and a brief record of any postpartum examinations. The postpartum record is a separate form. A notation is made of the use of prophylactic for the eyes of the new born and of the registration of the birth. This record is filed in the family folder. Provision is made to have this

record available at the health center, as well as to the nurse responsible for home contacts. To distinguish health center and office contacts from home or other contacts, entries may be made in red ink for the former. A new record is made for each pregnancy.

Birth Control as a Maternal Health Conservation and Eugenic Service

(a) *Birth Control with Respect to Maternal Health Conservation.*—Two birth control clinics have been in continuous operation in North Carolina for a number of years, the first having been established as long ago as 1922. Both clinics have been conducted under private auspices, with the approval and cooperation of local community leaders. In his health educational work, the Director of the Division of Preventive Medicine has been confronted with numerous requests from diseased or incapacitated mothers for advice as to the best methods and procedures to be employed for contraceptive purposes. Prenatal clinics have revealed that 12 per cent of the women examined during pregnancy have a venereal disease. Numerous births, occurring at too frequent intervals, have left a vast number of mothers in critically ill health, and tuberculosis and diseases of the heart and kidneys frequently contraindicate future pregnancies.

The State Board of Health was not officially identified with the birth control clinics in the State until early in 1937. At that time a physician who was interested in testing the public health value of a contraceptive program in a State unhampered by statutory restrictions, offered to assist the Board financially in conducting a demonstration for a period of one year. The executive staff of the State Board of Health accepted this offer, and a consultant was assigned to work under the supervision of the Director of the Division of Preventive Medicine. Medical and nursing consultant services were offered to local health departments, and on April 1, 1937, the State Department of Health officially began the sponsorship of the giving of contraceptive advice for medical reasons through these local departments. During the following eighteen months, 57 clinics were established in 50 of the 100 counties—all with the approval of the local medical societies.

The local procedure calls for the taking of careful records by public health nurses of all underprivileged applicants seeking contraceptive advice. Forms for this purpose are furnished by the State. Each of these histories is carefully reviewed by the county health officer and his approval must be obtained before contraceptive measures are made available. Literature covering the organization of clinics operated in conjunction with prenatal centers is furnished through the State Division of Preventive Medicine. Accepted cases are clinically examined and instructed with reference to the use of a simple foam-sponge method. The records assembled are being studied by the Sociological Department of the University of North Carolina, and the development of the program is being followed by the Birth Control Research Bureau of New York.

(b) *Sterilization with Respect to Special Groups*

Eugenic Board of North Carolina.—Legal provision is made for a Eugenic Board consisting of 5 members, as follows: (1) The Commissioner of Public Welfare, (2) the Secretary of the State Board of Health, (3) the chief medical officer of an institution for the feeble minded or insane, *not* located in Raleigh, and (5) the Attorney General. A member may delegate his power for a single hearing to an assistant. A chairman is elected from the Board's membership. Rules governing the conduct of proceedings before the Board are adopted by this body and may be revised from time to time. The Board also selects the chief medical officer referred to above (3). Meetings are held quarterly in Raleigh for the purpose of hearing cases and attending to any pending business. Members receive no compensation for their services. The Board appoints a secretary who conducts the business of the Board between meetings, receives petitions, keeps records, calls meetings, and, in general, acts as the executive of the Board in matters delegated to him by the Board. Proceedings before the Board are instituted by a petition setting forth the

facts of the case: a statement, verified by at least one physician, of the mental and physical status of the patient; and the Board may require additional social and medical history of the patient and his family. The purpose of the petition is to obtain an order from the Board authorizing sterilization. Provision is made for serving a copy of the petition on the patient and his legal or natural guardian not less than 15 days before the presentation of the petition to the Board. But this procedure is not necessary if the parent, legal or natural guardian, or spouse, next of kin, etc. duly witnessed the petition requesting that the sterilization be performed, providing the other provisions of the act are complied with. Provision is made for the Board to hear and consider petitions, to call for commitment papers and other records, to place witnesses under oath, to take depositions, and to keep a record of proceedings. A party to the proceedings may be represented by counsel. The Board may deny or approve petitions; the patient or guardian may select a physician of his own choice for consultation or operation. Orders of the Board may be sent to the petitioner by registered mail. If the patient, legal guardian, etc. shall consent in writing to the operation, as ordered by the Board, the operation may take place at any time designated by the prosecutor. Provision is made for right of appeal to the superior court, and such court may affirm, revise, or reverse the orders of the Board. Appeal costs are taxed as in civil cases and if the case is determined in favor of the plaintiff, the cost is paid by the county. Civil and criminal liability of the petitioner or any other person legally participating in the execution of this law is denied, except in cases of negligence in the performance of the operation. Necessary medical treatment is unaffected by this law. Records of proceedings of the Board are to be permanent and not open to the public except on court approval. Orders issued in behalf of inmates of institutions must be complied with prior to discharge of such patients. The existing rights of surgeons are not affected by this act in the removal of diseased tissue from patients.

Mentally Defective Persons.—The governing body or responsible head of penal or charitable institutions supported by the State is authorized and directed to have the operation of asexualization or sterilization performed upon any mentally diseased, feeble minded, or epileptic inmate or patient as may be deemed advisable from the individual and social viewpoint in accordance with the provisions of the law. Furthermore, upon the petition of the superintendent of public welfare, the next of kin, or the legal guardian, provision is made for the county commissioners to have one of these operations performed at public expense upon such persons who are not inmates of public institutions, providing provisions of the law are complied with. These operations can only be done for such persons by qualified and registered physicians upon a written order signed by the responsible executive head of the institution or superintendent of public welfare, or next of kin, or legal guardian. The prosecutors of these cases are as follows: (1) the executive head, or authorized agent, of such institutions concerned or county superintendent of welfare for institutionalized persons; and (2) the county superintendent of welfare or corresponding official when the person is not an inmate of an institution. The prosecutor institutes proceedings under the following circumstances: (1) When the operation is in the best interest of the individual concerned; (2) when the operation is in the best interest of the public good; (3) when such persons should not have children; (4) when requested by next of kin or legal guardian; and (5) when discharging certain patients from institutions.

Operations on Inmates of State Institutions.—The medical staff of a penal or charitable institution or hospital is instructed to have an operation performed by a competent surgeon upon an inmate when, in the judgment of a board of consultation, such operation would be for the improvement of the mental, moral, or physical condition of the person in question. The board of consultation consists of at least one representative of the medical staff of the several charitable and penal institutions and one from the State Board of

Health, who are designated by the governing bodies of the several institutions. Such operations are not to be performed until affirmed by the Governor and the Secretary of the State Board of Health.

c) *Infant and Preschool Hygiene.*—Local registrars of vital statistics report births each month to whole-time health officers. By this means as well as through the records kept of maternal services and a general knowledge of births occurring in the health district, the public health staff is in a position to institute promptly its infant welfare services. Such services are primarily intended for the under-privileged child and limited to well babies.

The nurse visits the home for the purpose of assisting the mother in putting into effect hygienic principles, to carry out the doctor's orders, to give timely advice regarding medical assistance, to demonstrate procedures, to distribute literature, etc. The health literature which may be left in appropriate cases includes pamphlets on breast feeding, infant care, and the prevention of infant diarrhea. Furthermore, baby's daily time cards and diet list may be placed in the hands of intelligent mothers. In isolated mountain districts, the nurse may inoculate children against diphtheria.

In most of the whole-time health districts infant welfare centers are operated with local physicians in charge. These physicians are remunerated by subventions received from the Division of Preventive Medicine. Here the infants, as well as preschool children, are given health examinations, and the mother is advised as to defects disclosed and what should be done to have them corrected. Attention is also given to feeding problems, and immunization procedures may be carried out in appropriate cases.

The frequency with which infants and preschool children are seen in their homes by the nurse or at the health centers depends upon a number of factors, including the adequacy of the nursing staff, the status of health of the child, etc. During the biennium ending June 30, 1938, nearly 23,000 preschool children were given medical examinations and an additional 17,000 were inspected by nurses.

Records.—An infant and preschool record form is supplied by the State Board of Health, together with instructions as to filling it in. To distinguish between records of infants and those of preschool children an indelible ink dot is placed on the upper left corner, after the child has passed his first birthday. This form is composed of two parts which are to be stapled together. The first part pertains to health examinations (space being provided for four entries), to a record of communicable diseases which the child may have had, and to the child's history of immunizations and immunity tests. The second part provides space for recording health supervision in the home, as well as clinic visits. Infants or children who have a positive diagnosis of childhood tuberculosis, have their records designated with a red sticker placed on the upper edge of the card.

This record is filled out at the time of the first contact with the child. The record, once opened, is filed in the family folder, and all subsequent services are entered thereon. The closing of the record may be occasioned by death, removal from the health jurisdiction, or entry into school. In the latter case, a summary of the preschool record is made on the new school record which is opened. When the infant and preschool record is no longer needed, it may be closed and the record placed in the closed file.

4) CRIPPLED CHILDREN

Status

Computed on the basis of 6 per 1,000 population, the number of crippled children under 21 years of age in North Carolina is approximately 20,000. Of these, 13,510 had been located and registered as of June 30, 1938. About 75 per cent of these children are in need of some kind of orthopedic care. During the year 1936 there were 3,043 cases seen at the orthopedic clinic at Gas-

tonia, and an analysis of these cases shows that the principal causes of orthopedic defects were as follows:

	Per Cent
Osteomyelitis	16
Congenital deformities	15
Tubercular arthritis	14
Infantile paralysis	12
Non-tubercular paralysis	8
Burns	8
Other causes	27

ORGANIZATIONS

State

To coordinate and broaden the State's activities in behalf of crippled children, a Department of Crippled Children, Division of Preventive Medicine, was established in April, 1936, by the State Board of Health with the assistance of the Children's Bureau. Prior to this development, civic clubs in many communities of the State sponsored the orthopedic care of individual children, and after the establishment of the crippled children's hospital at Gastonia (1921) an extension service consisting of the operation of occasional diagnostic clinics constituted the principal method of locating handicapped children. Later, in 1925, the State Board of Health in conjunction with the vocational services of the Department of Education operated clinics for the purpose of locating cripples to provide diagnosis and to provide minor treatments, especially for those who were over 16 years of age. With the passage of the Social Security Act, the Department of Crippled Children was organized. The director of the Division of Preventive Medicine serves as Medical Director of this Department, and the staff, in addition, consists of a State supervisor, three field supervisors, a secretary, and a clerk.

One of the field supervisors is a graduate nurse who has had five years experience in orthopedic nursing. The other two are trained as physical therapists.

Budget.—The Department's budget for the fiscal year 1937-38 was as follows:

	Total	*State*	*Children's Bureau*
Salaries	$ 11,175		11,175
Surgeons fees	33,103	3,504	29,599
Travel	6,600		6,600
Hospital care	151,542	110,219	41,323
Other	8,696	996	7,700
	211,116	114,719	96,397

State Advisory Commission.—Provision is made for an advisory commission, composed of ten members, representing:

- North Carolina Orthopedic Hospital at Gastonia
- State Department of Public Welfare
- Medical profession
- Public Health Organization
- Department of Vocational Education
- Civic groups

The members of the Commission are appointed by the State Health Officer, either directly or from nominations made to him. Regular meet-

Local Advisory Committees.—Provision is also made for local advisory committees to promote the work of local orthopedic clinics which operate as units of the State plan. In clinic districts where full-time health organizations are operating, the membership of the local advisory committees consists of a representative of the health department, welfare department, and of a civic club. These local committees cooperate with the State Department of Crippled Children in the operation of orthopedic clinics, attending to such matters as obtaining clinic supplies, braces for children, X-ray films, a transporta-

ings are held every six months and special meetings may be called more often. The Commission is an advisory and policy forming body.

tion fund for the orthopedic surgeon in charge of the clinic, transportation for taking certain children to the clinics, etc.

SERVICES

The three main objectives that the Department of Crippled Children has set for itself are: (a) to locate and register all crippled children in the State; (b) to effect and facilitate treatment of these children; and (c) to follow these children until the age of twenty-one years.

(a) *To Locate and Register Crippled Children.*—To this end the services of local health, welfare, and school officials are being utilized. There are welfare organizations in each of the 100 counties of the State, and full-time county or district health departments in 76 counties of the State. Transcripts are being made of the existing records of State clinics, of those of semi-public and private clinics, and of the records assembled in 1934 by the American Legion Auxiliary which cooperated with the Emergency Relief Administration in making a survey of physically handicapped children. An uncompleted check of the records of the American Legion child welfare survey has revealed that about 54 per cent of those studied fall within the classification of a crippled child. Cases are filed and a cross reference index is made so as to maintain individual records on all cases accepted for treatments in hospitals, to keep track of costs, to follow progress during treatment, and to record the subsequent progress of these cases. As of June 30, 1938, there were 13,510 cases registered from clinic sources.

(b) *Treatment of Crippled Children.*—Depending upon circumstances, treatment may be undertaken at an orthopedic clinic, at one of eighteen selected general hospitals, or at the North Carolina Orthopedic Hospital.

Orthopedic Clinics.—Provision is made for the operation of 19 clinics in various strategic parts of the State. Of these, 16 are administered by the Department of Crippled Children, two by the North Carolina Orthopedic Hospital, and one by Duke Hospital. Apart from providing expert diagnostic services for crippled children, these clinics are utilized for making minor corrections, for undertaking postoperative treatments, and for follow-up observations. State operated clinics are held monthly; those at the State orthopedic hospital, weekly; and those at Duke Hospital, daily. There are 11 qualified orthopedic surgeons in the State who conduct the several clinics and perform the operative work. The surgeon in charge is paid $25 per clinic if the clinic is situated in the town of his residence. His travel expenses are provided by the civic club which sponsors the clinic. During the biennium July 1, 1936, to June 30, 1938, the total number of clinic sessions conducted was 377, with a total of 12,495 examinations. A manual for orthopedic clinics has been prepared by the Department of Crippled Children. It deals primarily with the use of forms which are to be employed, giving detailed instructions as to how they are to be filled out and how files should be set up for them.

Hospitalization.—Crippled children requiring hospital treatment may be sent either to the North Carolina Orthopedic Hospital or to one of the 18 selected general hospitals. Patients requiring long periods of treatment are selected for admission to the former.

The North Carolina Orthopedic Hospital.—In 1917 the General Assembly set aside $20,000 for the establishment of a State Orthopedic Hospital, provided a similar sum were subscribed for the same purpose from sources other than the State of North Carolina. Funds from other sources were eventually subscribed, and in 1921 the North Carolina Orthopedic Hospital, an institution providing fifty beds, was opened at Gastonia. The law provides for appointment by the Governor of a board of nine trustees, each member of which serves for a period of six years. Appointments are so arranged that

three members of the board retire every two years. The Governor fills all vacancies. Organization within the board is effected by electing one of its members president, one secretary, one treasurer, and three as an executive committee. Power is granted the board to erect buildings, to make improvements, to adopt by-laws, and to do all things necessary to the government of the institution. At present, the maximum capacity of the hospital is about 165 patients. The number of cases dealt with during the biennium ending June 30, 1938, was 1,080; the average daily population was 160; and the average cost per patient per day was $1.65.

General Hospitals.—The State Board of Health has selected 18 general hospitals in the State for the treatment of crippled children in which there are approximately 100 beds available for continuous use, or provision for the treatment of about 1,000 patients annually. During the biennium ending June 30, 1938, there were 1,502 patients admitted to these general hospitals; the average number of days' care per discharge was 24.2, and the average cost per day per patient was $2.50.

Attention is also called to the development, through private philanthropy of a training center at Durham of children afflicted with spastic paralysis. This service is under the direction of one of the country's authorities in this field of medicine. Furthermore, special boarding home care for crippled children was instituted in September, 1937.

Record Forms.—The record forms currently employed by the Department of Crippled Children include:

Census Registration of Cripples
Clinic Registration, or History Blank
Hospital Admission Authorization
Surgeon's Report
Field Record
Social Service Record (used at present in four counties)
Application for Extension of Hospital Care.

Hospital admissions are authorized by the Director of the Division of Preventive Medicine and the State Supervisor of the Department of Crippled Children. When a crippled or deformed child requires orthopedic treatment and his family is not able to provide for the cost involved, in whole or in part, the parent or guardian files an application for assistance from the Department of Crippled Children. A form is prescribed and used for this purpose which is signed by the parent or guardian and gives the essential data needed about the case. An affidavit attesting to the financial circumstances of the ward is signed by the chairman of the local clinic committee and the superintendent of public welfare and constitutes a part of the application form. On behalf of indigent cases the State Board of Health pays a flat per diem rate of $2.50 which includes all services, such as nursing, X-rays, etc. If the hospital does not employ an anesthetist, an additional charge of $5.00 may be included for each patient requiring anesthesia.

(c) *Follow-up Work.*—Provision is made for supervising and follow-up services for crippled children until they reach the age of 21 years. Three field supervisors on the staff of the Department locate crippled children and refer them to the clinics, assist in clinic procedures, observe and supervise the care of patients in the home following treatments in clinics and hospitals, and safeguard results achieved in treatment. Insofar as present personnel permits, the frequency of home visits depends upon the individual case needs. The State Department of Crippled Children cooperates with all educational facilities, especially with the Department of Vocational Rehabilitation, to the end that these cripples attain an education and find suitable employment. During the biennium ending June 30, 1938, there were 2,871 homes visits made to old and new patients and 495 patients referred to the Vocational Rehabilitation Department. The financial ability of families to meet the cost of care and treatment is investigated by local social welfare workers.

f. ORAL HYGIENE

Status

The status of oral hygiene among school children in North Carolina is indicated by the following analysis:

	Survey North Carolina Dental Society February, 1934 Per Cent	*Findings of Division of Oral Hygiene Per Cent*
Children needing dental treatment	84	84
Average number of cavities per child	—	1.42
Children needing extractions	—	56.5
Extractions needed per child	—	0.56
Children needing extractions of permanent teeth	—	11.5
Children needing permanent teeth filled	—	82.5
Children needing deciduous teeth filled	—	60.0
Children needing orthodontic treatment	9.0	9.3
Children with diseased gums	9.0	9.0
Children with mottled enamel	8.0	7.6
Children who had lost a permanent tooth	8.0[1]	7.8
Children never in a dental office	55.0	55.3

Reference may also be made to the findings of the Division in an isolated community in North Carolina (Currituck County) in which milk and seafood constituted a prominent feature of the diet. The teeth of the school children were as hard as flint and only one pupil had a tooth cavity. In another community (Sampson County), comparable as far as economic status was concerned, the diet of the children was faulty and there was need for a vast amount of dental work. Furthermore, evidence is emerging which indicates that when dental corrections are made underweight children frequently come up to normal weight and that the ability of such children to maintain satisfactory scholastic standards is markedly improved.

The Division of Oral Hygiene

In 1918 free dental clinics for the public schools of the State were developed by the Bureau of Medical Inspection of Schools. On December 31, 1928, Doctor J. C. Johnson, after a period of service in the field of public health dentistry, resigned, and on January 1, 1929, Doctor Ernest Branch was appointed as his successor. Following the reorganization of the State Board of Health in 1931, oral hygiene services were separated from the Bureau of Medical Inspection of Schools and were established as an integral division of the State Board of Health—the Division of Oral Hygiene. This change was not effected by a State law, but by action of the State Board of Health.

Although there is no legal requirement that the dental profession shall be represented on the membership of the State Board of Health, a dentist was appointed as a member of the board in 1919, and since then it has been customary for the Governor to include a dentist (recommended by the State Dental Society) in the list of members which he appoints. With regard to county boards of health, on the other hand, a State law requires that a dentist shall be a board member, providing one resides within the county.

Personnel.—The personnel of this division consists of a Director, a secretary, 30 dentists (of whom 5 are colored), two educational assistants who operate a puppet show, and 2 part-time helpers who work in the central office.

[1] Missing six year molars.

All dentists employed by the Division must be members of the North Carolina Dental Society and are required to serve on a full-time basis. In selecting staff dentists special consideration is given to their aptitude for this type of work. Staff dentists are required to take the course in public health dentistry at the University of North Carolina. They receive instructions in pedagogy, visual education, public speaking, child psychology, and attend courses offered to health officers in public administration, communicable disease control, sanitation, preventive medicine and hygiene, vital statistics, and public health laboratory methods.

The Director of the Division supervises the dentists of the staff who work in the field, teaches mouth hygiene in the teacher training institutions of the State, lectures to civic clubs, and meets with appropriating bodies and other interested parties to secure funds to finance the dental program.

The Organization of Oral Hygiene Services for County and District Health Departments

Two plans are followed, namely: (1) the local dental program is carried out by staff dentists of the State Division of Oral Hygiene, and (2) a dentist is employed on the staff of a local department of health. In administering the former plan, which has almost universal application in North Carolina, the State Director of Oral Hygiene schedules the staff dentists to work in these local health districts for such time as it may be necessary to complete the dental work in each, especially in the first three grades, or the time allotted the staff dentist is calculated upon the amount of local funds contributed to the dental program. Although these staff dentists cover certain prescribed areas of the State, the geographic areas do not necessarily coincide with the boundaries of local health units—i.e., the local district for dental services may include more than one local health jurisdiction. These field dentists are directed essentially by the State Director of Oral Hygiene and are only loosely connected administratively with the local departments of health—i.e., the plan of administration of these dentists is essentially vertical. Assignments to dental districts are temporary, making it possible for the director to interchange dentists freely among the various dental districts of the State. Because of this arrangement it is impractical for field dentists to establish residences in the districts they serve.

With reference to the second plan of administration, dentists are employed on the staffs of three local health organizations in the State. These dentists function independently of State supervision and their programs are restricted essentially to treatment services.

Budget.—The Division of Oral Hygiene is financed by the State Board of Health, the Children's Bureau, and from local sources, such as government authorities, civic groups, women's organizations, and interested individuals. During the fiscal year 1937-38, there were 60 counties of the State which contributed to the oral hygiene program as compared with 17 counties in 1931-32. The annual budget for the fiscal year ending June 30, 1938, was as follows:

		Per Cent
Salaries	$70,892	71.6
Travel	17,471	17.6
General expense	10,729	10.8
	$99,092	100.0

The State contributed 28.4 per cent of these funds; the Children's Bureau, 35.3 per cent; and local agencies, 36.3 per cent.

Services.—The scope of the State's oral hygiene program is twofold: (1) oral hygiene education, and (2) detection and correction of dental defects. The public schools and other public institutions of the State in which children are assembled, such as orphanages, children's homes, the State School for the Blind, industrial training schools, etc. constitute the principal field of activity for this Division.

(1) *Educational Program.*—The problems of oral hygiene are approached primarily from the educational standpoint. Beginning with the expectant mother, the teaching activities continue with the infant and preschool child, with children in primary, grammar, and high school grades of the public school system, and with students in the teacher training institutions of the State. A form letter is sent to expectant mothers if the pregnancy is reported to the State Board of Health and an additional form letter is mailed when the birth certificate of her child is received. Dentists give their services at summer round-ups of children entering the schools in the fall. Attention, however, is given principally to children of school age. In the public schools the field dentists function in the role of teachers of oral hygiene. These children are taught the importance of healthy mouths, the proper use of the tooth brush, how a tooth develops, the value of proper diet, how a tooth in a pathological condition may, as a focus of infection, prove detrimental to the entire system, and the importance of periodic visits to the family dentist. The instruction given is adjusted to the mental development of children in the several grades. For example, in the lower grades the story method is used and the subject matter is illustrated with stereoptican views, blackboard drawings, posters, and models. In the home economic departments diets in relationship to tooth and bone building are stressed, and in the science departments tooth morphology is discussed by dentists. Furthermore, the teaching responsibilities of the dentists are shared with the Secretary in the central office. She is a trained educator and an experienced graded-school teacher. She has prepared a bibliography of dental health materials for children, classified by grade, and a list of references to dental literature to aid teachers in the instruction of children. She also prepares and distributes, through the school system, printed literature of an educational value and supplies educational material on oral hygiene for use in school papers. As a visual means of teaching oral hygiene, the puppet show is extensively used and tends to break down the children's fear of the dentist. The teachers are prepared to cooperate with the Division of Oral Hygiene through regular courses of lectures given by the Director at the Teacher Training Institutions of the State. Participation on the part of school children is encouraged by requesting letters, embodying the rules of oral hygiene addressed to "Little

Jack," one of the leading characters of the puppet show, and by rearing groups of rats at school to demonstrate the differences between faulty and well balanced diets. Popular support and interest are solicited among adults by giving lectures, by printing news items, and by making radio addresses. During the six-year period 1930-36 approximately 7,500 lectures on oral hygiene were given to about a half million listeners.

(2) *Detection and Correction of Dental Defects.*—After the educational part of the oral hygiene program for the public schools has been completed, the second feature of the program is as a rule undertaken, namely, the dental inspection of all children of school age. The purpose of these inspections is to refer to local dentists, through parents able to pay, children who need dental care, and to administer directly without cost dental treatment that may be necessary for children who are under-privileged, as selected by the grade teachers. Parents who are economically able to engage the services of a practicing dentist are notified through the mails to consult their private dentist, but no diagnosis is made. Permission slips from parents for dental care of under-privileged children are not filed with the field dentist or the teacher. Record forms for dental inspections are kept for each child, and weekly reports of dentists are made to the State Division on a form prescribed for the purpose. During the six-year period 1930-36, there were inspected about 385,000 children of whom 62 per cent were treated by the dental staff of the Division and 22 per cent were referred to local dentists. The following analysis of certain features of this dental service for the biennial period 1936-38, is of interest:

Children referred	94,397
Children needing nothing done	40,495
Children treated	117,762
Amalgam fillings	74,527
Cement fillings	13,436
Silver nitrate treatments	193,040
Teeth extracted	87,864
Teeth cleaned	113,426
Miscellaneous treatments	8,782

g. PUBLIC HEALTH LABORATORY SERVICES

In the early days of public health laboratory work in North Carolina special attention was directed to the testing of water supplies. As early as 1879 legislative provision was made for chemical analysis of water, and in 1895 bacteriologists were engaged. Later, in 1900, the State Board of Agriculture agreed, upon request of the State Board of Health, to examine samples of water from public water supplies as a temporary arrangement. In 1903 the general assembly authorized the State Board of Health to charge a fee of $5.00 for each analysis of a public water supply in order to provide funds to pay the Department of Agriculture for its services. Although legislative provision was made in 1905 for the establishment of the State Laboratory of Hygiene, the appropriation made was inadequate, and hence the services of the Department of Agriculture were continued. During this year the General Assembly imposed a water tax of $64 upon all public water supplies, and this provision, which increased laboratory funds, had a beneficial influence upon subsequent developments. In 1907 the General Assembly ap-

propriated sufficient additional funds to establish the State Laboratory of Hygiene, and Dr. C. A. Shore assumed charge as director in December, 1907, and served until his death in 1933, when he was succeeded by Dr. John H. Hamilton. The laboratory was situated in quarters over a store on Fayetteville Street, Raleigh, until 1917, when it was moved to its present quarters on Jefferson Street. The main building of the present laboratory was constructed on property purchased by the State Board of Health in 1916, and in 1925 an annex was added. Owing to the rapid expansion of laboratory services in recent years and the inadequacy of accommodations in the present building, the General Assembly authorized the sale of $160,000 worth of revenue bonds (augmented subsequently by a P. W. A. free grant of $130,909) for the construction of a modern, three story laboratory building on Caswell Square, adjacent to the present State Board of Health Building. Ample space will be provided for increasing present activities, for the inauguration of new procedures, and for the development of new biological products. The proposed new vibration-proof building, which will provide for a modern library and auditorium, will be known as the *Clarence A. Shore Memorial Building*. Furthermore, a laboratory farm, situated five miles west of the city of Raleigh has been purchased as a necessary adjunct to the central laboratory, where horse stables, small animal houses, and operating rooms are being constructed. At the farm the procedure, in part, for the preparation of biological products will be carried out, and most of the small animals needed by the central laboratory will be bred. The acreage of the farm provides pasturage and tillable ground for the growth of a large portion of the feeds needed for all laboratory animals.

Personnel.—In 1937-38 the staff of the State Laboratory of Hygiene consisted of 45 employees, including two malaria technicians lent by the Bureau of Epidemiology. In addition to the Director, there were 3 chemists, 9 bacteriologists, 4 serologists, 9 technicians, 13 clerks, and 6 others.

Budget.—For the year ending June 30, 1938, the total expenditures of the State Laboratory of Hygiene amounted to $123,256, of which the State contributed $117,678, or 95.5 per cent, and the United States Public Health Service, $5,578, or 4.5 per cent. The receipts from the annual tax on public water supplies and from certain revenues accruing from the distribution of laboratory products, either manufactured in the laboratory or purchased from commercial firms, were $55,766.

The principal items of the budget were, as follows:

Salaries	$62,795
Scientific supplies	42,850
Other expenses	17,611

Receipts, expenditures, and legislative appropriations in behalf of the State Laboratory of Hygiene for the past three bienniums were:

Biennium	*Receipts*	*Appropriations*	*Expenditures*
1930-1932	$ 73,324.22	$ 90,891.82	$164,216.04
1932-1934	75,380.43	69,031.78	144,412.21
1934-1936	94,573.44	85,676.06	180,249.50
1936-1938	103,291.78	116,891.93	220,183.71

Other Laboratory Facilities.—A food and drug laboratory is operated by the State Department of Agriculture and a testing laboratory by the State

CLARENCE A. SHORE MEMORIAL BUILDING

STATE BIOLOGICAL FARM

Highway Department, both of which are situated in Raleigh. Attention should also be called to laboratory facilities of the universities of the State, affording the State laboratory staff opportunities for consultation with professors who are affiliated with these institutions, should questions arise requiring highly technical knowledge.

Although there are no branch laboratories of the State Laboratory of Hygiene, there are a number of public health laboratories operated by local boards of health, and three private laboratories which undertake the examination of specimens for public health purposes. The local public health laboratories are not affiliated with the State laboratory at Raleigh, and the private laboratories are not licensed or supervised by the State. Attention should also be called to *typing stations* for pneumococcus organisms which have been established recently through the sponsorship of the State Medical Society and the State Board of Health at a number of strategic points in the State, especially in connection with local hospitals. The technicians or physicians in charge of these stations were given intensive training at Duke University preliminary to assuming their responsibilities. Furthermore, laboratories have been established in connection with public water plants to check locally the efficiency of operation and to supplement the analyses made at the State Laboratory of Hygiene. Arrangements may be made by local health departments with these laboratories for rendering other services as, for example, the chemical and bacteriological analyses of milk samples. Moreover, reference is made in this report to the laboratory at Morehead City, which is operated by the Division of Sanitary Engineering as an aid in administering sanitary measures in the production of sea foods.

Services.—The services rendered by the State Laboratory of Hygiene fall into two main categories, namely, (1) the examination of specimens and samples of public health significance in the control of communicable diseases or for guidance in the administration of sanitary control measures, and (2) the manufacture and distribution of biological products. Although the laboratory is primarily an operating service, research activities may be undertaken from time to time to the end that economy and efficiency may be brought about in carrying out the technical procedures of this laboratory. For example, studies of the Kline and Wasserman tests have been undertaken recently in cooperation with the United States Public Health Service. One of the findings of this investigation indicates the need for increasing the sensitivity of the Wasserman test as carried out in this laboratory.

The laboratory examinations performed include: the bacterial and chemical analyses of public and private water supplies; agglutination tests for typhoid and paratyphoid fevers, endemic typhus and Rocky Mountain spotted fever, undulant fever, tularemia, and dysentery; serological tests for syphilis; microscopic examinations for diphtheria, tuberculosis, malaria, rabies, gonorrhea, Vincent's angina, meningitis, and intestinal parasites, as well as dark field examinations of chancre serum, cultures of blood, feces, and urine for pathogenic organisms, such as typhoid bacilli; spinal fluid analysis; animal inoculations for such diseases as tuberculosis, rabies, and diphtheria,

etc. During the biennium ending June 30, 1938, over 600,000 examinations were made, and, of these, over 460,000 were serological tests for syphilis. The volume of work is increasing rapidly as is indicated by the following tabulation of the total examinations performed for each of the four past biennial periods:

July 1, 1930-June 30, 1932	206,187
1932- 1934	247,673
1934- 1936	416,388
1936- 1938	618,568

In recent years, specimens of pathological tissues have been referred for examination to the Medical Schools of the University of North Carolina, Duke University, and Wake Forest College. Milk analyses are not performed at the State Laboratory of Hygiene.

The trends in the volume of laboratory examinations performed and in the positive findings reported for selected diseases are as follows:

	Biennium					
	1930-1932			1936-1938		
	Number	Positive	Per Cent	Number	Positive	Per Cent
Diphtheria	11,148	1,538	13.8	15,641	1,083	7.0
Typhoid (blood cultures)	2,703	414	15.3	7,313	528	7.2
Tuberculosis (sputum)	5,589	853	15.3	17,127	2,560	14.4
Rabies (microscopic)	1,758	570	32.4	2,309	722	31.3
Malaria (blood smears)	1,748	75	4.3	4,015	449	11.2

The increase in specimens examined for diphtheria bacilli is interpreted as indicating an improvement in the method of management of this disease, i.e., cultures are being made more frequently in determining the diagnosis, in searching for carriers, and in releasing patients from quarantine. The success of efforts of the laboratory in encouraging the use of blood cultures as an aid to diagnosis of diseases in which bacteria occur in the blood stream is indicated by the marked increase of blood specimens from patients suspected of having typhoid fever. This is important from the public health viewpoint because ordinarily typhoid fever can be diagnosed sufficiently early, where the blood culture method is employed, to make possible the application of protective procedures in time to prevent the occurrence of secondary contact cases. Since the advent of the tuberculin test and of examinations by X-rays, it would appear that the examination of specimens of sputum are being used primarily as a check on the progress of tuberculosis patients and as a means of detecting carriers, rather than as an early diagnostic procedure. The marked increase in sputum specimens received by the laboratory indicates an improvement in methods of management of these cases in recent years. The number of examinations of animal brains for the presence of Negri bodies decreased by 37 per cent for the biennium ending June 30, 1938, as compared with examinations made during the preceding 2-year period, and approached the volume of work done by the laboratory for the biennium 1930-32. Owing to the undulant character of the incidence of rabies, it is anticipated that the downward trend of this disease will continue in North Carolina until about 1940, after which there will be an upward trend until about 1945. Renewed interest in the control of malaria, referred to elsewhere, is reflected in the markedly increased volume of blood smears examined for malaria organisms in the laboratory in recent years. Attention is

also called to the following trends with respect to the examination of specimens at the laboratory, namely, (1) the dark-field examination of specimens from suspected chancres has shown distressingly slow progress even though it is one of the most dependable aids in the early diagnosis of syphilis; (2) a substantial increase in the number of Weil-Felix examinations made in the laboratory indicate that endemic typhus and Rocky Mountain spotted fever are increasing in prevalence and that these diseases are more widely distributed throughout the State than previously; (3) a rise in the incidence of undulant fever and tularemia may also be indicated by an increasing demand for agglutination tests as an aid in the establishment of the diagnoses of these diseases; and (4) more than 14,000 specimens of feces were submitted to the laboratory to be examined for the ova of intestinal parasites, and approximately 11 per cent showed some type of infestation, the hookworm being the most prevalent parasite. The increase in the number of these specimens indicates that there has been no waning of interest in the State's parasitic disease problems.

The State Laboratory of Hygiene manufactures the following biological products: diphtheria antitoxin and schick test materials, smallpox vaccine, rabies treatments, typhoid vaccine, tetanus antitoxin, pertussis vaccine, and certain autogenous vaccines and bacterial cultures. In addition, the following products are bought and distributed at cost: diphtheria toxoid and toxin-antitoxin, neoarsphenamine, sulpharsphenamine, and bismuth tartrate; scarlet fever antitoxin, Dick and blanching test materials for scarlet fever; erysipelas antitoxin; antivenene; and meningitis serum. In 1908 a Pasteur Institute was established as a part of the Laboratory of Hygiene, and persons exposed to rabies came from all parts of the State to receive prophylactic treatments. The attenuated virus used was obtained from the hygienic laboratories (now the National Institute of Hygiene) at Washington until 1918, when the State Laboratory of Hygiene began to manufacture locally its own antirabic virus. The decrease in the prevalence of rabies resulted in a marked reduction of the number of antirabic treatments supplied during the biennium ending June 30, 1938, as compared with the previous biennium. In 1909 the General Assemly provided that counties supply free diphtheria antitoxin to indigents and later, in 1911, made an appropriation to enable the State to contract with manufacturers in order to obtain the advantage of a reduced cost for local purchasers. Subsequently, the State Laboratory of Hygiene began the manufacture and free distribution of this product except for the cost of the container. The distribution of diphtheria antitoxin has increased during the biennium ending June 30, 1938, as compared with that of the preceding 2-year period. The laboratory also manufactures and distributes schick test outfits free but purchases diphtheria toxoid from commercial companies for distribution at cost. Smallpox vaccine has been manufactured and distributed free by the laboratory for a number of years; the quantity distributed during the biennium ending June 30, 1938, increased noticeably as compared with the preceding biennium. In 1914 the laboratory began the production and free distribution of typhoid vaccine, and a decrease in its use

during recent years may be due to a decline in the prevalence of the disease in the State. The growth in interest in the control of Syphilis is reflected in the marked increase of antisyphilitic drugs now being distributed.

h. INDUSTRIAL HYGIENE

Because disablement or death from an occupational disease was not compensable by statute, the 1935 assembly amended the Workmen's compensation Act to provide that incapacitation by any one of 25 occupational diseases or conditions must be treated as the occurrence of an injury by accident and thus compensable. The Legislature made the Industrial Commission responsible for the administration of this amendment, which has become known as the *Occupational Disease Act*, and appropriated $10,000 for the execution of its provisions. Owing to the inadequacy of this fund, and appreciating that the scope of this legislation lay in the field of preventive medicine, the Industrial Commission sought and obtained the cooperation of the State Board of Health and the United States Public Health Service. With the aid of a subsidy from the Federal Government, it was possible in September, 1935, to establish under the tutelage of the United States Public Health Service, a Division of Industrial Hygiene, under the joint auspices of the State Board of Health and the Industrial Commission. In practice, however, this Division functions as an integral part of the State Board of Health, under the State Health Officer.

The 1935 amendment to the Workmen's Compensation Act of 1929, provided for the appointment of an Advisory Medical Committee consisting of three members, each to serve for a period of six years. Members of the Committee are appointed by the Industrial Commission, with the approval of the Governor, and must be licensed physicians specially qualified in the diagnosis and treatment of occupational diseases. The chairman of the committee is appointed by the Industrial Commission. The present chairman is the Director of the Division of Industrial Hygiene. The function of this Committee is to conduct such medical examinations as may be required by the Industrial Commission, to assist in post-mortem examinations when so directed by the Commission, and to give expert testimony at hearings before the Industrial Commission.

The Division of Industrial Hygiene

Personnel.—Budgetary provision is made for a medical director, an industrial hygenist, two physicians, an assistant engineer, a medical technician, and a secretary. During the biennium 1936-38, however, the assistant engineer and one of the assistant physicians were employed only for about six months. Provision is made also for two expert consultants who render services as required. To equip themselves for their responsibilities, two of the physicians and the engineer spent six weeks in Washington, D. C., attending a seminar on industrial hygiene conducted by the Division of Industrial Hygiene of the United States Public Health Service.

Budget.—For the biennium ending June 30, 1938, the total budget of this Division amounted to $28,769, of which the State Legislature, through the

Industrial Commission, provided $10,000 and the United States Public Health Service $18,769. The main divisions of the budget were as follows:

	Amount	*Per Cent*
Salaries	$18,833	66
Travel	5,500	19
General Expenses	4,436	15
	$28,769	100

Services.—The broad purpose for the Division's services is the prevention of occupational diseases. The scope of the program includes the following activities: (1) sanitary surveys of industries, (2) consultation service to industries and State departments, (3) investigation of occupational environments with reference to health hazards, (4) examination of plans for industrial systems of ventilation, (5) evaluation of methods for the control of occupational hazards, and (6) clinical and X-ray examination of workers. The Division functions essentially as a fact finding agency. In initiating this program, special attention has been given to the investigation of industries which give rise to dust which may be detrimental to the health of workers exposed. The engineering personnel of the Division is concerned with the environmental features of the problem, and the medical personnel is engaged in the examination of employees of these trades from the clinical viewpoint. By these specialists working together, the character of the dust, degree of exposure, etc., can be correlated with the health status of the individuals exposed. With this knowledge available, remediable measures may be evolved and put into effect. Considerable progress has been made in equipping the Division for the performance of services which it is intended to render, including a trailer unit equipped with office space and X-ray apparatus. In the qualification of atmospheric dust, the Greenburg-Smith impinger apparatus and the methods of the United States Public Health Service are employed. The scope of the medical examination includes: (1) a clinical and occupational history; (2) a physical examination with particular attention to the cardio-respiratory system; (3) a chest X-ray, and whenever there is serious lung pathology, stereoscopic films; and (4) laboratory examinations, including sputum, blood, and urine when indicated. Since April 1, 1937, blood tests for syphilis have been made routinely.

Dr. R. R. Sayers and his associates in the United States Public Health Service initiated the industrial hygiene service in North Carolina. Owing to preliminary work, which indicated that silicious dusts constitute the most extensive disease hazard in the State, a survey was made of 138 industrial establishments involving 5,608 persons. With respect to mica, talc, and asbestos textile industries, more than 75 per cent of workers were exposed to silicious dust, whereas, this figure was 55 per cent for all the workers surveyed. Measures for the control of dust were provided for 25.7 per cent of all workers exposed, but in many instances the devices employed were of little or no protection. This survey also revealed that the status of welfare activities, provisions for sick benefits, group life insurance, and first-aid facilities for workers were disappointing.

During the first year of the existence of the Division, its personnel assisted workers of the United States Public Health Service in their studies of indus-

tries in which the workers were exposed to the hazards of silicosis and asbestosis. Additional services rendered by the staff included a study of occupational disease hazards associated with foundry and machine shops, with mining and milling of pyrophyllite and steatite, with the quarrying and crushing of granite, and with newspaper establishments, brick plants, and cotton mills.

The program of the Division is influenced by the following requirements of the Workmen's Compensation Act: (1) that the Industrial Commission shall designate by order each industry in which the workers are exposed to the hazards of asbestosis and silicosis; (2) that the Industrial Commission shall make studies and recommendations with a view to reducing or eliminating such hazards; and (3) that persons about to be employed in such industries be given a pre-employment examination to determine their suitability for work involving exposure to the hazards of asbestosis and silicosis.

During the biennium ending June 30, 1938, a total of 5,585 persons were examined clinically and radiographically by the personnel of the Division. About half of these represented pre-employment examinations of persons seeking employment in industries that have been designated by the Industrial Commission as those in which workers are exposed to the hazards of asbestosis and silicosis. A final analysis of the 5,885 examinations has not been completed, but an evaluation of the extent of the occupational disease hazards involved in the founding of gray iron, the mining and milling of pyrophyllite, and the quarrying and screening of granite, has been made and issued in the form of three separate detailed reports. These studies involved the clinical and radiographical study of 1,394 persons, of whom 680 were employed in foundries, 100 in pyrophyllite mining and milling, and 614 in granite quarrying and screening. In the foundry study, 9.7 per cent of the 546 persons examined, who had been employed for more than one year, showed evidence of pulmonary pathology attributable to silicious dust; in the pyrophyllite study, 59 of those who had been employed less than two years showed no evidence of pulmonary pathology attributable to dust, while 14, or 34 per cent, of 41 persons employed for more than two years exhibited dust pathology; and in the study of the granite quarrying and screening industry, 234 of the persons examined had been employed for less than one year. None in this group showed evidence of lung involvement attributable to the inhalation of granite dust, and only 3.7 per cent of the 380 persons who had been employed for longer periods showed such pulmonary involvement.

As previously stated, all clinical examinations since April 1, 1937, have included a serological test for the presence of syphilis, and a total of 3,100 blood specimens were tested during the biennium 1936-38.

i. County Health Organization and Supervision

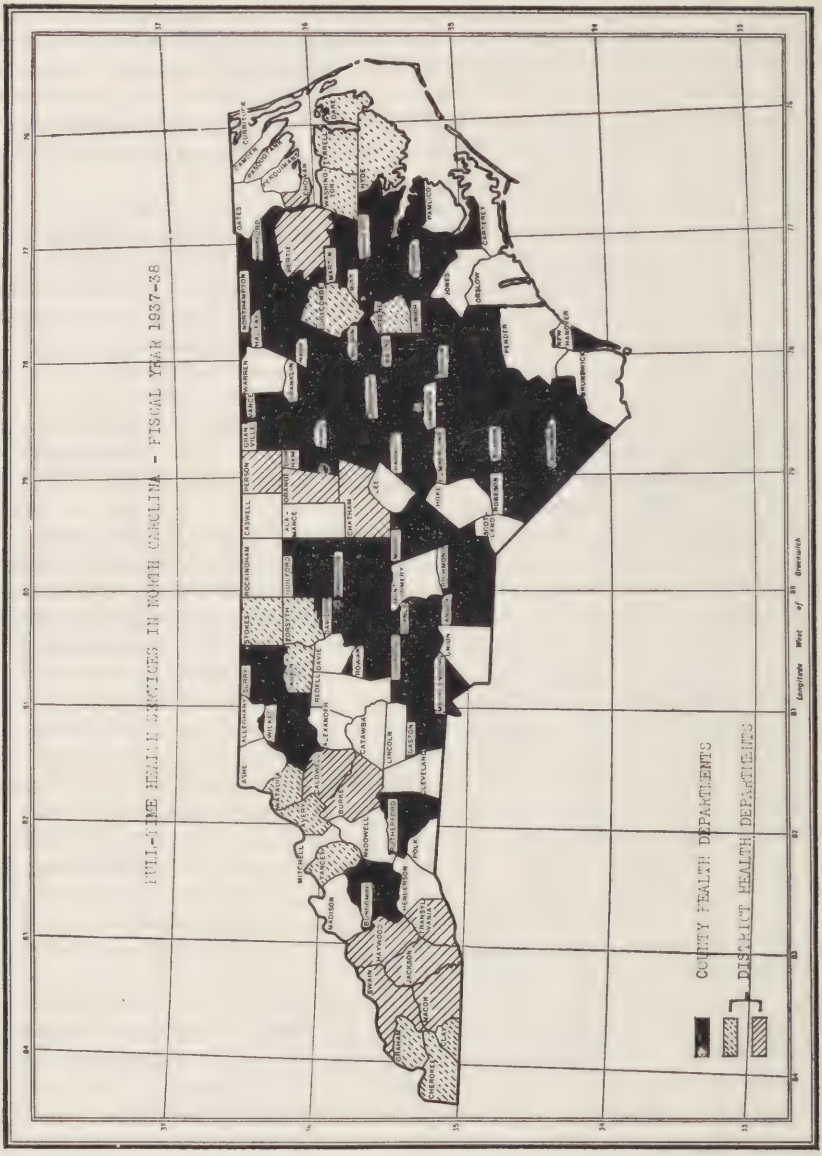
In its relations with county boards of health and with the health organizations functioning under these boards, the State Board of Health is officially represented by its Division of County Health Work. It is upon this Division, too, that the State Board of Health relies for the maintenance of effective

and harmonious working relations between the other Divisions of the State Department of Health and county, district, and city health departments. Considerable space has been devoted, in the foregoing pages, to services rendered by the Division of County Health Work, but it seems appropriate at this point to give a brief sketch of the development, with the cooperation and support of the State Board of Health, of local health services, and to describe the organization and financing of the Division, under the aegis of which these developments are being promoted.

Prior to 1911, county boards of health or county sanitary committees, with the assistance of part-time medical superintendents of health and quarantine officers, were almost entirely responsible for public health service in the counties of North Carolina. Local sentiment for more effective county health work, however, began to crystalize about 1910, when the State Board of Health, in cooperation with the Rockefeller Sanitary commission, undertook measures for the eradication of hookworm. This work had been in progress hardly more than a year when on June 1, 1911, Guilford County organized its health services on a full-time basis, and before the end of that year three other counties appointed full-time health officers. By 1913, this movement for better health work by counties had resulted in the appointment of ten whole-time county health officers.

To facilitate the development of local health work, the General Assembly of 1917 enacted a bill entitled: *An act for the cooperation and effective development of rural sanitation,* and appropriated $15,000 to be used by the State Board of Health in matching other available funds for that purpose. At the same time the International Health Board likewise appropriated $15,000 to be used by the State Board of Health in promoting cooperative county health work. To represent its interests in these developments, the State Board of Health established in the State Department of Health a Bureau of County Health Work and placed in charge Dr. B. E. Washburn, whose services were lent free by the International Health Board. Dr. Washburn served in this capacity until 1920, when he was recalled by the International Health Board and was succeeded by Dr. K. E. Miller of the United States Public Health Service. Dr. Miller's services continued until March 1, 1923, and thereafter county health work was directed by a succession of officers until the State Board of Health was reorganized in 1931. At that time county health work, epidemiology, and vital statistics were consolidated into one division, which was placed under the direction of Dr. John H. Hamilton. Following the death of Dr. C. A. Shore, in 1933, and the appointment of Dr. Hamilton to succeed him as director of the State Laboratory of Hygiene, county health work was again made a separate division. At this time the division was placed under the direction of Dr. M. V. Ziegler of the United States Public Health Service, who remained in charge until 1934, when he was recalled by the Public Health Service. Direction of the Division of County Health Work was then turned over to Dr. R. E. Fox, who had just completed a postgraduate course in the Harvard School of Public Health.

During the academic year 1934-35 a course for the training of physicians as health officers was undertaken at the University of North Carolina under


FULL-TIME HEALTH SERVICES IN NORTH CAROLINA - FISCAL YEAR 1937-38
COUNTY HEALTH DEPARTMENTS
DISTRICT HEALTH DEPARTMENTS

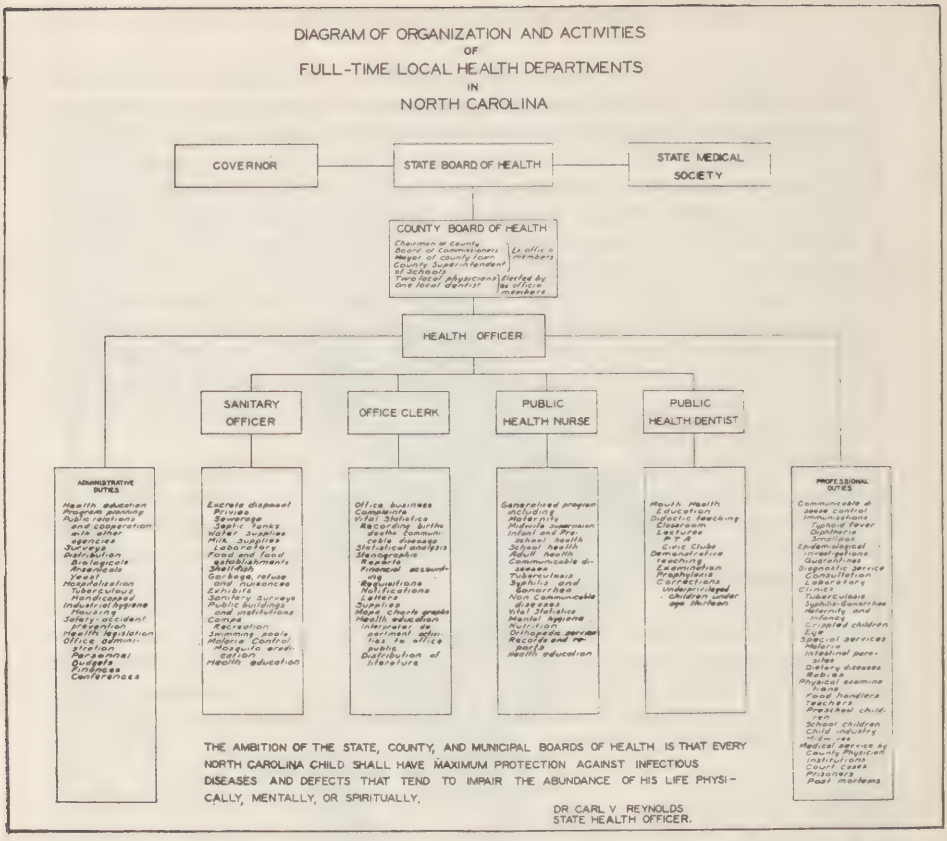
the auspices of the Public Health Administration. This course proved to be so successful that plans were made to enlarge its scope by the establishment of a public health department at the University for the training of health officers and sanitarians (See section on Preventive Medicine, pages 90 and 91). Also in 1935, an enabling act was passed by the General Assembly authorizing the State Board of Health to use any available funds at its disposal, not otherwise appropriated, to establish full-time local or district health service for any town, city, and county, or group of such units, where the local governing powers desire the establishment of such service and are willing to support the enterprise to an amount at least equal to the amount of the State financial assistance. Under this additional authority and with Federal funds provided through the United States Public Health Service and the Children's Bureau, plans were worked out for marked expansion and intensification of full-time health services.

During the year ending June 30, 1938, funds contributed by the State and other agencies, principally Federal, were allocated by the State Board of Health to 48 full-time county and district health departments that were rendering service in 66 counties. To another health department, serving a single county, the Board made an allotment of State funds but no allotment of funds derived from other sources. Rendering these services, therefore, were 49 full-time health departments, each having jurisdiction in a single county or in a group of from two to five counties. The former are known as county health departments; the latter as district health departments. The number of counties being served by each of these 49 health departments as of June 30, 1938, was as follows:

		Number of Health Departments Serving:				
Total Counties	Total Departments	One County	Two Counties	Three Counties	Four Counties	Five Counties
67	49	40	3	4	1	1

Over and above the supplementary health funds allocated through the State Board of Health to county and district health departments, are allocations made to five city health departments. These funds, amounting in 1937-38 to $12,737, were derived entirely from sources other than the State of North Carolina. These county, district, and city health departments served a total population (based on the 1930 census) of 2,408,430 during the year ending June 30, 1938. The health officers and nurses employed by these departments were as follows:

		Total
Health Officers		
County health officers	40	
District health officers	9	
Assistant health officers	5	54
City health officers		5
Total health officers		59
Public Health Nurses		
County and district nurses		146
Nurse supervisors		7
City nurses		42
Nurse supervisors (city)		3
Total public health nurses		198



Personnel of the Division of County Health Work.—The personnel of the Division for the year 1937-38 was as follows:

Director	1
Consultant sanitary engineer	1
Consultant public health nurse	1
Negro field agent	1
Consultant statistician	1
Senior accounting clerk	1
Senior stenographer	1
Junior stenographers	2
Total	9

The division budget also provided for the salary and traveling expenses of a consultant in public health administration, but this position was not filled because no suitable incumbent was available.

Budget of the Division of County Health Work.—For the year ending June 30, 1938, the total budget of the Division of the County Health Work amounted to $424,800, of which the state provided $100,949, or 23.8 per cent, and the

Federal Government $323,851, or 76.2 per cent. The major divisions of the budget were:

Salaries	$ 27,185
Travel	9,003
General expenses	1,845
Subsidies to counties and districts	307,080
Subsidies to cities	12,737
Training personnel	42,450
Regional training school	24,500
Total	$424,800

Although health funds contributed by local governments in support of their respective health departments constitute no part of the budget of the Division of County Health Work, it is of interest to note that the combined budgets of the Division and of county, district, and city health departments aggregate a total of $1,188,991 for the year ending June 30, 1938, itemized as follows:

Budget of Division of County Health Work	$ 424,800
County and district health appropriations	560,206
City health appropriations	203,985
Total	$1,188,991

C. MISCELLANEOUS CONSIDERATIONS, INCLUDING REFERENCES TO ALLIED SERVICES

1. Introduction

In order to assemble such background information as may assist the public health administrator to visualize the extent to which official health agencies in the State function as integral parts of the general government machinery, and to acquaint him more fully, perhaps, with his opportunities and responsibilities to promote and take an active part in cooperative plans of mutual interest with other government and non-government agencies within the State, this section of the study treats with the following topics: (1) General description of the State; (2) Population; (3) Government; (4) The educational system; (5) Social welfare services; (6) The agricultural services; (7) Medical, dental, and public health associations; and (8) Hospital administration.

2. General Description of the State

North Carolina lies between 34° and 36° 30′ north latitude and between longitude 75° 30′ and 84° 15′ west. Possessing very nearly one one-thousandth part of the land area of the world, it has a gross area of 52,426 square miles, of which 48,740 square miles is in land. This area forms a portion of the Atlantic slope which stretches from the Appalachian Mountains to the sea. The length of the State from east to west is over 500 miles, and its greatest width is 188 miles. It is crossed by three fairly well defined physiographic regions—the coastal plain, the Piedmont plateau, and the Appalachian Mountains regions.

The eastern section of the State lies in the coastal plain, which has but a slight rise to the west. It includes the tidewater or seacoast area, where there are swampy sections and sluggish sounds almost enclosed by long nar-

row sandy stretches. Geologically, it is covered with a stratum 50 to 300 feet thick of Tertiary sand and clays and shows numerous marl deposits and phosphate beds. The soil is generally sandy and there are extensive river bottoms of fertile clayey loam. The deep peaty black soil of swamps, when drained, is exceedingly fertile. The Piedmont region, beginning with an elevation of about 200 feet at the *fall line*, extends westwardly for an average distance of about 200 miles, rising gradually to an elevation of 1,200 feet or more at the foothills of the Blue Ridge. Marked by a series of gentle hills and valleys, the region presents a pleasing and ever changing variety of landscape. Crossing this region in a general southwest direction, are several important river valleys, such as the Chowan, the Roanoke, the Neuse, the Cape Fear, the Yadkin, and the Catawba. The soil is clay and a gravelly and sandy loam, and is productive of a variety of crops, including cotton, corn, tobacco, vegetables, and fruits. In this section also is a three-foot seam of triassic coal, covering an area of about seventy square miles. Of the two bituminous coal fields, one is situated in Chatham and Moore Counties, and the other in Stokes and Rockingham.

The Appalachian Mountain region comprises an area of about 6,000 square miles. The region may be regarded as a high plateau, bounded on the east by the irregular chain of the Blue Ridge and on the west by the Great Smoky or Unaka Mountains. This plateau represents the culminating region of the Appalachian system and embraces its largest masses and its loftiest peaks. It has an average elevation of 2,500 feet. Mount Mitchell (6,688 feet) is the second highest peak east of the Rocky Mountains. In addition to its rich timber and mineral resources, this region contains numerous fertile valleys, the recent developments of which has proceeded rather rapidly due to penetration of the area by paved roads.

The numerous rivers of this state measure a grand total of nearly 3,500 miles in length, of which scarcely 400 miles are navigable. The vast water power of these rivers marks out the future of the State as one of great manufacturing possibilities. Moreover, there are numerous lakes, of which Mattamuskeet, the largest, has an area of 100 square miles.

The climate of North Carolina is generally free from severe extremes of heat and cold. Temperatures are affected by the large bodies of water on the east and by the mountains of the west, although the rather common belief that the State is materially affected by the Gulf Stream is erroneous.

The mean annual temperature of the State as a whole is 59 degrees, and the annual average rainfall is 60 inches for the eastern belt, 45 for the central, and 58 for the western.

3. POPULATION

With regard to the social status of the early settlers in North Carolina there seems to be some difference of opinion. The conclusions of the more reliable investigators, however, appear to leave little doubt that the present native white population are descendants of a sturdy stock of English, Scotch-Irish, and German settlers. According to Connor, the people of North Caro-

lina "are, first, the commercially-minded, law abiding, self-reliant Anglo-Saxon or English; second, the Celtic Scotch Highlander, picturesque, proud and sensitive; third, the democratic and liberty-loving, religiously minded Scotch-Irishman; and finally, the German, shrewd, economical, conservative, a lover of learning and religion. By these people and their descendants the history of North Carolina has been made and her destiny shaped; and the typical North Carolinian of the 20th century is neither Saxon nor Celt, nor Teuton, but is the offspring of the three."

The State population, as recorded by the Bureau of the Census for 1930, was 3,170,276—there being 1,575,208 males and 1,595,068 females. This shows an increase of 23.9 per cent over the population as recorded for 1920, as compared with an average decennial increase of 16.5 per cent for the previous four decades. As compared with an average of 41.3 persons per square mile in the United States in 1930, North Carolina had an average of 65.0 persons per square mile. With respect to the composition of the 1930 population by race, 70.5 per cent were white, 29.0 per cent were Negroes, and 0.5 per cent belonged to other races, principally Indian. The percentage increase in the 1930 Negro population of 20.3 over that of 1920 was almost double that of any of the previous four decades.

Of the total population, 809,847 were classified as urban, and 2,360,499 as rural, with 1,597,220 actually living on farms. The urban population increased 65.2 per cent during the decade 1920-30, whereas the rural population increased only 14.1 per cent. The marked changes in the status of rural and urban populations during the period 1890-30 are shown in the following tabulation:

Population	1930	1920	1910	1900	1890	Per Cent Increase 1920-1930
Per cent urban	25.5	19.2	14.4	9.9	7.2	65.2
Per cent rural	74.5	80.8	85.6	90.1	92.8	14.1

Slightly less than half the population (49.2 per cent) resides in the Piedmont section, and approximately 86 per cent is to be found in the Piedmont and coastal plain regions combined. The 1930 census records 1,141,129 gainful workers, representing 36 per cent of the population 10 years old or over. More than fifty per cent (56.2) of the gainful workers are engaged in agriculture, while manufacturing and mechanical industries, domestic and personal services, and trade, in the order named, employ the next largest numbers of workers.

North Carolina is one of the leading agricultural states, with corn, cotton, tobacco, peanuts, vegetables, and fruits among its principal crops. Along the coast are oyster, crab, trout, and shad fisheries. Facilities here are such as to provide for fishing in the open sea or in the numerous sounds and large river mouths. Some 15,000 persons are engaged in fishing and in preparing and marketing sea foods taken from this region.

More than 300 different kinds of minerals are known to occur in their natural state in North Carolina, but there are only about seventy that have a definite economic value at present. Iron deposits are widely distributed over

the State, but, in general, the ores are of low grade. The State is one of the chief sources in the country for feldspar and mica, and also has considerable talc, soapstone, pyrophyllite, clay, stone, sand, and gravel. There are many mineral springs, the most noted of which are: Panacea Springs in Halifax County, Seven Springs in Wayne County, Hot Springs in Madison County, Sulphur Springs in Jackson County, and the Glen Alpine and Connelly Springs in Burk County.

The State has large forested areas of yellow pine, oak, cypress, spruce, chestnut, hemlock, and red gum, and produces large quantities of resin, turpentine, and tar. During the past few decades, with the help of its water power and relatively cheap labor, it has developed more rapidly than any other southern state. It is especially important in the manufacture of cotton goods and tobacco products; it also produces furniture and other lumber products, knit goods, brick and tile, fertilizer, and cottonseed oil.

Well over 5,000 miles of railways are in operation, of which less than 500 miles are electric. The three great trunk lines are the Southern, the Seaboard Air Line, and the Atlantic Coast Line. The Norfolk Southern operates about 800 miles, with its trunk line extending from Norfolk to Charlotte. These, with numerous feeder lines, reach into practically every county in the State. The primary State Highway System, is perhaps second to that of no other State in the country, having been made so by the expenditure of considerably more than 200 million dollars during the past twenty years. In addition to over 11,000 miles of primary roads, there were, as of July 1, 1935, more than 47,000 miles in the so-called County Road System of the State, representing a total investment of about $270,000,000. Several years ago the State assumed responsibility for the construction and maintenance of all public highways, and North Carolina is perhaps the only state that accomplishes this without resort to a property tax. This intricate network now furnishes all-weather roads to the important communities of every county.

4. GOVERNMENT

a. *State Government.*—North Carolina is governed under a State Constitution which is the supreme law of the State except as it may conflict with the Constitution, laws, and treaties of the United States. The present Constitution was adopted in 1868, although it has been amended from time to time. Amendments require a three-fifth vote of each House of the General Assembly followed by a majority of the votes cast when submitted at the next general election to the qualified voters of the whole State. The Constitution provides for three major divisions of government—legislative, executive, and judicial.

The legislative department, or General Assembly, consists of two houses: the Senate, with 50 members; and the House of Representatives, with 120 members. Both senators and representatives are elected by popular vote for a period of two years. The Lieutenant-Governor is ex officio president of the Senate, and the presiding officer of the House is elected by each session.

More than ninety standing committees, composed of members of the Senate or of the House of Representatives, are appointed to conduct special studies and to prepare bills for the consideration of the General Assembly. The General Assembly meets biennially at Raleigh on the first Wednesday after the first Monday in January in each odd-numbered year.

The executive department, which is provided for in the Constitution, consists of the Governor, the Lieutenant-Governor, the Secretary of State, the Auditor, the Treasurer, the Superintendent of Public Instruction, and the Attorney-General. These officials are elected by popular vote for a term of four years. To be eligible for election to the offices of governor and lieutenant-governor, a candidate must be at least thirty-five years old, must have been a citizen of the United States for five years, and a resident of the State for two years. Neither of these officials is eligible to immediately succeed himself in office.

The Constitution also provides for a Council of State consisting, ex officio, of the Secretary of State, the Auditor, the Treasurer, and the Superintendent of Public Instruction. The Attorney-General is, ex officio, the legal adviser to the executive department. The functions of the Council include: rendering advice to the Governor in the execution of his duties; maintaining a signed record of their advice and proceedings, and furnishing such records to the General Assembly when required; advising the Governor in regard to convening the General Assembly for extra sessions; and acting in conjunction with the Governor on problems involving the State's property interests and internal improvements.

The Governor is vested with both constitutional and statutory powers, but neither of these grants him the authority to veto legislation. Moreover, the Council of State, which is not appointed by him, has certain restrictive powers. His executive power is limited principally to pardon and reprieve and to command the militia except when the latter is called into the service of the United States. Administratively, he is empowered to supervise the official conduct of all executive and administrative offices; to see that all public offices are filled and their duties performed; to visit and to inquire into the management of all State institutions; to make numerous official appointments and fill vacancies; and to serve, ex officio, as president, chairman, or member of various boards and commissions. The Governor has no specific legislative responsibility, but it is his duty to keep the General Assembly informed respecting the affairs of the State and to recommend to that body such measures as he deems expedient. The Governor's judicial power is limited to the appointment of justices of the peace and special superior court judges; to filling Supreme Court vacancies that occur between elections; and to ordering special terms of court and transferring judges from one district to another.

In addition to the executive department, the Constitution provides for an elective commissioner of agriculture, and there have been created by statute about ninety State boards, commissions, or other official administrative

agencies to perform the functions of the State government. The numerous methods by which the members of these statutory boards and commissions are created, and by which their respective executive officers are chosen, are prescribed by law. A few are elected by the people, others are appointed by the Governor, and still others are appointed by the Governor with the approval of the Senate, etc. Thus it will be observed that one of the most noteworthy differences between the government of North Carolina and the government of other states is the restrictions placed upon the chief executive of North Carolina.

The Constitution provides that the Judicial power of the State shall be vested in a court for the trial of impeachments, a Supreme Court, superior courts, courts of justices of the peace, and such other courts inferior to the Supreme Court as may be established by law. The court for the trial of impeachments is the Senate, and the House of Representatives has the exclusive power of impeaching. When the Governor is impeached, the Chief Justice is required to preside. The Supreme Court consists of a chief justice and six associate justices, elected for a term of eight years. Four members constitute a quorum for rendering decisions by a majority, but no decision involving a construction of the Constitution of the State or of the United States may be made except by the Court en bloc.

There are in North Carolina an eastern and a western judicial division. Each of these is in turn divided into ten districts, and a superior court judge is elected for each district by the popular vote of the whole State. The judge is elected for a term of eight years, he must be a resident of the district for which he is elected, and he is required to hold court in rotation in the various districts of his division. The law requires the Governor to appoint two special superior court judges from the eastern and two from the western judicial divisions, and, if he deems it necessary, to appoint an additional special judge for each of these subdivisions. A solicitor is elected in each district for a term of four years, and a clerk of the superior court is elected for a like term for each county.

Justices of the peace are elected by a township for two years, or appointed by the Governor for four years. In their respective jurisdictions they try (1) that class of civil actions which involve demands for small debts and property of little value, and (2) that class of criminal actions, called petty misdemeanors, which involve only slight punishment.

The funds used to operate the government of North Carolina are collected by the State Department of Revenue, paid into the State Treasury, appropriated by the General Assembly, using the State Budget as a guide, and audited by the State Auditor.

The Department of Revenue is in the charge of the Commissioner of Revenue, who is appointed by the Governor for a term of four years. In addition to the Revenue Department proper, the Commissioner supervises the Bureau of Motor Vehicle and Highway Safety Division and a Section of Gasoline and Oil Inspection. The Department is responsible for the administration of the revenue laws and the enforcement of the collection of taxes imposed by law.

It assesses and collects all State taxes and deposits these funds daily to the credit of the State Treasurer.

The Treasury is in the charge of a constitutional officer elected by popular vote for a term of four years. He is, ex officio, a member of: (1) The Council of State, (2) The State Board of Education, (3) The Board of Public Buildings and Grounds, and (4) the State Sinking Fund Commission. He is also, ex officio, treasurer of about fifteen State institutions or agencies. His duties, which are prescribed by law and not by the Constitution, have to do with the handling of State funds and the procurement of State credit.

The Bureau of the Budget of the Advisory Budget Commission was created by legislative enactment in 1925, and the law was amended and reenacted in 1929. The Commission consists of the Chairmen of the Appropriation and Finance Committees of the House and Senate, and two other persons appointed by the Governor for unspecified terms. The Governor is, ex officio, the Director of the Budget but an assistant director, responsible to the Governor, is actually in charge. This law vests in the Governor direct and effective supervision over all agencies and institutions, and every State agency that receives any State funds. The duties of the Bureau of the Budget include: the preparation of the budget document, the making of field surveys and studies of governmental agencies, making allotments, authorizing transfers of items within appropriations, supervising expenditures after allotment by approving all contracts, reviewing copies of all departmental purchase orders issued, receiving and studying all departmental accounting reports received monthly from the departments, auditing the offices of the State Auditor and State Treasurer, supervising in general the accounting operations of all departments, checking up fuel consumption and costs, and keeping in touch with the farming operations of the State through reports received from the State Director of State owned farms.

The State Auditor is a constitutional officer, elected by popular vote for a term of four years. In superintending the fiscal affairs of the State and in keeping and stating all accounts in which the State is interested, the Auditor both lays the grounds of budget action and carries into effect certain phases of the budget adopted. For these purposes the present organization embraces divisions of receipts, disbursements, general accounts, and field audits. A rather unrelated duty is the Auditor's direction of the Pension Bureau.

The taxing power of the State is limited by Article V of the Constitution. The General Assembly may levy a capitation tax, the proceeds of which are to be applied to education and the support of the poor, but actually this tax is not levied by the State but is reserved for counties and cities. All taxes on moneys, credits, investments in bonds, stocks, joint stock companies, or otherwise, and on real and personal property had, until 1936, to be levied uniformly, with exceptions in regard to certain notes and mortgages. A constitutional amendment, passed in 1936, changed this provision so that taxation need be uniform only on each class of property taxed, thus enabling the General Assembly to classify property for the purposes of the ad valorem tax. Here again, the State is not directly concerned, since it does not itself

levy a property tax, but the limitations do nevertheless concern the control of the General Assembly over the taxation power of the minor subdivisions of the State. The State may, and does, however, in accordance with the Constitution, levy taxes on trade, professions, franchises, and incomes.

The revenue of the Government of North Carolina is divided into three separate funds: the General Fund, the Highway Fund, and the Agriculture Fund. About 97 special funds also are maintained in the process of accounting for monies derived from institutions and departments, from the Federal Government and other special sources, loans, bonds, etc. These funds, however, are handled separately from the regular state tax revenues and they constitute no part of the three funds enumerated above.

The General Fund revenue includes receipts from inheritance, license, income, franchise, sales, and beer taxes, transfers from the Highway Fund in some years, and non-tax revenue from earnings, fees, dividends, etc. The expenditures include the cost of maintaining the legislative, judicial, executive, and administrative branches of the State government, the State educational and charitable and correctional institutions, State aid and obligations, pensions, public schools, and debt service.

The Agriculture Fund gets the major portion of its revenues from a fertilizer tax, and the remainder from numerous other taxes, sales of seeds and serum, test farm operations, etc. The expenditures cover the cost of the Department of Agriculture, the operation of the State College Experiment Station, the State Fair, and the seed improvement work.

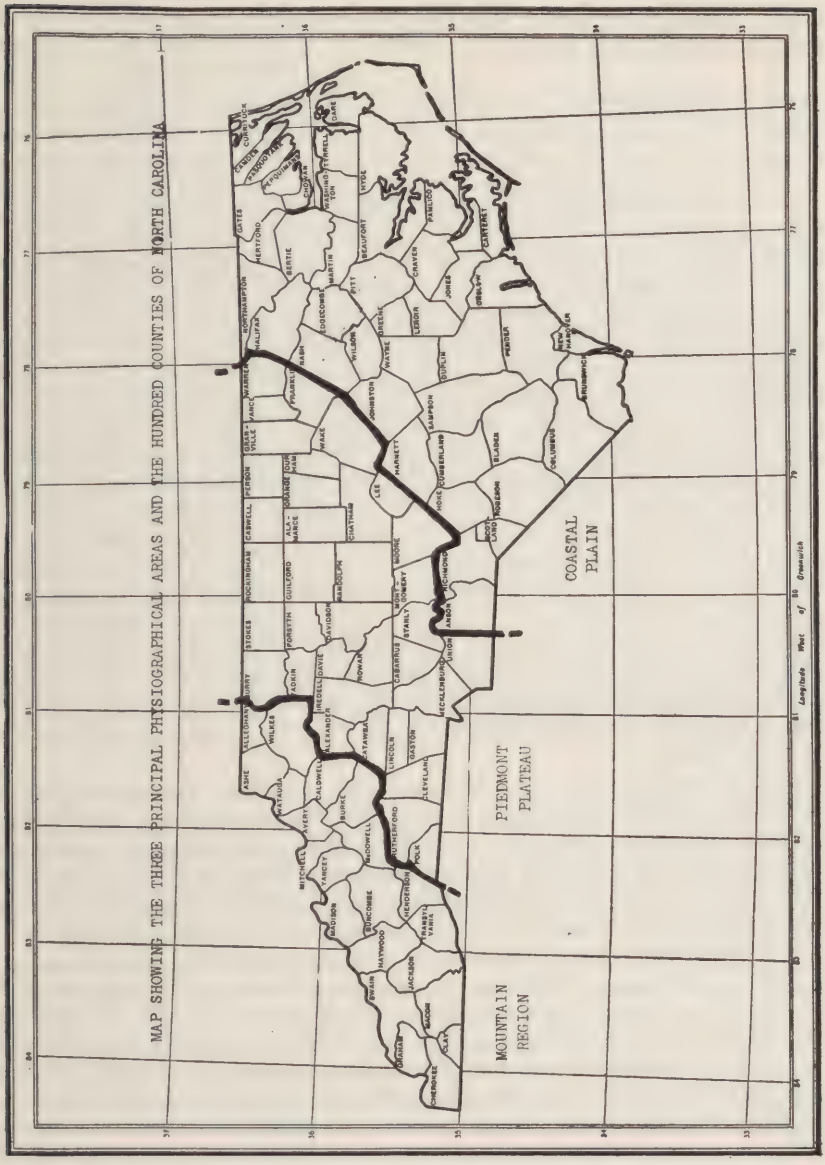
The Highway Fund is derived principally from the tax on gasoline, from registrations, and from Federal Aid allocations. Legislation enacted in 1931 shifted the responsibility of constructing and maintaining county roads from the counties to the State and permitted the State Highway Commission to take over all county prisons and to operate a parallel prison system. Later, in order to facilitate and further coordinate the efforts of the State Highway Commission and the State Prison, the General Assembly of 1933 consolidated these two departments into the North Carolina State Highway and Public Works Commission, of which the State Prison was made one of the divisions. Then, in 1934, the engineering division of the above named Commission was made entirely responsible both for prisoners and for public works. The State now has eighty-six units in the prison system, which includes a recently remodeled penitentiary, all operated under the State Highway Fund.

Receipts into, and expenditures from, the General, Highway, and Agriculture Funds during the year ending June 30, 1938, will be found in tables numbers 3, 4, 5, and 6, in the accompanying appendix.

The outstanding State debt at the end of the fiscal years indicated was as follows:

June 30, 1930	$170,814,600
1932	172,909,000
1934	161,926,000
1936	163,894,000
1938	152,487,500

Of the 1938 total, $83,895,000 represented highway bonds, which will be re-


MAP SHOWING THE THREE PRINCIPAL PHYSIOGRAPHICAL AREAS AND THE HUNDRED COUNTIES OF NORTH CAROLINA
COASTAL PLAIN
PIEDMONT PLATEAU
MOUNTAIN REGION

tired eventually out of the highway department's special revenues. The total debt in 1938 was divided as follows:

General Fund bonds	$ 56,007,500
Highway bonds	83,895,000
Special school building bonds	10,085,000
World War Veterans' loan bonds	2,500,000
Total State debt	$152,487,500

b. *Political Subdivisions.*—North Carolina has 100 counties, 17 cities and 4 incorporated towns of 10,000 or more inhabitants, and about 350 incorporated places with smaller populations. In addition to these, each county is divided into townships varying in number from 3 to 26. The wide variation of administrative problems is realized when one considers the marked disparity in point of area and density of population. Of the 100 counties the averages are: an area of 488 square miles, a population of 31,703, and a density of 65 persons per square mile. But the range is wide from the largest to the smallest. Robeson has 990 square miles and Chowan has 165; Guilford has 133,010 inhabitants and Tyrrell 5,164. Average county area runs highest in the coastal plain section and lowest in the Appalachian Highlands; population and density, highest in the Piedmont section and lowest in the Tidewater area. Two North Carolina counties have larger areas than the national average of 956.6 square miles, and 52 counties have areas smaller than that average. Details with regard to area, population, and assessed values of each county will be found in Table No. 2 of the accompanying appendix. In addition to the above named political subdivisions there are 11 congressional districts; an eastern and a western judicial division, each subdivided into ten districts; thirty-three senatorial districts, each consisting of one to seven counties; and 169 school administrative units of which 100 are counties and 69 municipalities.

It should be noted here that the boundaries of political and administrative subdivisions within the State are in no sense permanently fixed. The General Assembly may create, change, or abolish counties; must alter the senatorial districts after the return of every census enumeration so that each district shall contain as nearly as possible an equal number of inhabitants; and is also empowered to reduce or increase the number of judicial districts.

c. *County Government.*—Counties were created by, and constitute a part of, the State Government. "They are created for political and civil purposes of the State, and may be created without special regard to the will, wish, or convenience of the people who inhabit them. They are instrumentalities of the State government, and subject to its legislative control; they possess such corporate powers and delegated authority as the legislature may deem fit to confer upon them, and such power and authority must be exercised in the way, and only for the purposes, prescribed by legislative enactment; and moreover they are always subject to legislative control, and their powers may be abolished, enlarged, abridged, or modified."[1]

The Constitution of North Carolina recognizes counties, but it does not de-

[1] Dare v. Currituck, 95 N. C., 158

fine how counties shall be created. Moreover, it imposes no limitations of any sort upon the legislature, as is frequently done in other states, regarding changes in county boundaries.

Section 1290 of the Consolidated Statutes defines the county and states its general powers as follows: "Every county is a body politic and corporate, and has the powers prescribed by statute, and those necessarily implied by law, and no others; which powers can be exercised by the Board of Commissioners, or in pursuance of a resolution adopted by them."

Article VII, Section 1 of the Constitution reads as follows: "In each county there shall be elected biennially by the qualified voters, as provided for the election of members of the General Assembly, the following officers: A treasurer, register of deeds, surveyor, and five commissioners." And, Section 13 states: "The General Assembly shall have full power by statute to modify, change, or abrogate any and all of the provisions of this article, and substitute others in their place, except sections seven, nine, and thirteen." Included in another section of the Constitution as county officers are: the sheriff, clerk of court, and coroner, none of whom is effected by section 13, quoted above; hence these three officers are still fortified by the Constitution. The sheriff is the executive officer of the state superior court and the inferior county courts, and the chief peace officer of the county. In the majority of counties, the sheriff is the county tax collector, and in a few counties he is also the county treasurer. The clerk of the superior court, in addition to keeping the court records, has important judicial duties in probate matters, in special proceedings, and as judge of the juvenile court. The coroner conducts inquests in cases of sudden and violent deaths, and acts in place of the sheriff when the latter is a party to a trial. The sheriff and the coroner are each elected for a term of two years, while the clerk of the superior court is elected for four years.

The other four so-called constitutional officers—the treasurer, register of deeds, surveyor, and five commissioners—are really not constitutional at all, since they are entirely subject to legislative control. The office of treasurer has been abolished in about half of the counties, and the duties are performed by the sheriff or by a bank chosen by the commissioners to serve as treasurer (fiscal agent) or depository of county funds. Where the office of treasurer has been retained, the incumbent is custodian of public money and pays it out under warrants from the proper authority. The register of deeds records deeds, mortgages, and other instruments, issues marriage licenses, and ordinarily acts as clerk to the board of commissioners.

With regard to the boards of county commissioners, consisting more frequently of three members than of five, the Constitution declares: "It shall be the duty of the commissioners to exercise a general supervision and control of the penal and charitable institutions, schools, roads, bridges, levying of taxes, and finances of the county as may be prescribed by law." Statutes passed by the General Assembly, however, have so restricted the powers of these boards that their present authority is limited largely to matters of taxation and appropriations. The assumption of State control over high-

ways and public schools has been a major factor in diminishing the administrative responsibilities of the county commissioners.

Under Chapter 91 of the laws of 1927—amended by Chapter 100 of the laws of 1931—any county in the State either on the initiative of the board of county commissioners, or on petition of ten per cent of the voters followed by a favorable referendum, might appoint a county manager. The manager might be a new officer appointed by the board and responsible to them, or the board may impose and confer such powers and duties upon one of its members or to some other elected official.

The 1927 session of the General Assembly also passed a law (Chapter 146 and subsequent amendments) requiring every county to appoint a county accountant. This office could be filled by the board or the duties might be delegated to another officer, such as the register of deeds or a member of the board. Even prior to the passage of this act a few counties had established the office of auditor with essentially the same duties as those proposed for the county accountant. Every county now has a chief fiscal officer who bears the title of auditor, accountant, or both.

Since one of the principal duties proposed for managers was the direction of county finances, and since this need was met by the appointment of county accountants, one of the strongest arguments for a manager was removed. Other duties proposed for the manager were to act as purchasing agent and to supervise public works, which consisted almost solely of highway construction and maintenance. The transfer of all secondary roads to the State in 1931 reduced the need and weakened the demand for county managers.

During the past decade several counties have set up managers, the designation usually being given to the chairman of the board or the county accountant. In a few counties, this plan has been tried for a brief period and then discontinued. Five counties—Durham, Catawba, Person, Pitt, and Robeson—have, or have had, appointive managers, but only Durham County is recognized by the International City Manager's Association. Alamance County has a chairman-manager.

5. THE EDUCATIONAL SYSTEM

From the framework established by the State Constitution, there has been developed in North Carolina a system of public schools that provides free primary and secondary education to all the children of the State—both white and colored. The Constitution provides for a Superintendent of Public Instruction who shall be elected by popular vote for a term of four years. The Constitution also provides for an ex officio State Board of Education, the membership consisting of the Governor, the Lieutenant-Governor, Secretary of State, Treasurer, Auditor, Superintendent of Public Instruction, and the Attorney-General. Boards created by legislative enactment include the State School Commission and the State Board for Vocational Education.

It is the duty of the State Superintendent of Public Instruction to direct the operations of the public schools and enforce the laws and regulations in relation thereto; to determine standards for approved schools; to prepare

curricular materials for the teachers of the public schools; to cooperate with county school authorities in the solution of problems in organization, financing, transportation, building, and teacher training; and to perform such other functions as are vested in him by law. In addition to these duties the State Superintendent performs a multitude of other services by virtue of being chairman, vice-chairman, or member of various boards and commissions. He has no direct relationship with State institutions of higher learning, which are under the control of their own boards or trustees, except through the teacher training regulations of the State Board of Education and as a member of the North Carolina College Conference.

The State Board of Education exercises control over the State Literary Fund, the Special Building Fund, and over the public lands owned by the State. Authority to legislate and make all needful rules and regulations in relation to the public schools and the educational funds, which was formerly vested in the State Board of Education, now devolves upon the State School Commission. The Board continues, however, to make rules and regulations governing the certification of teachers, and adopts the textbooks used in the public schools of the State.

To insure wise decisions in the selection of textbooks the law requires that the Governor and the State Superintendent of Public Instruction shall appoint for a term of five years a textbook (elementary) commission and a State committee on high school textbooks. Furthermore, in the interests of economy and efficiency, the General Assembly in 1935 created the State Textbook Commission, whose duty it is to purchase the necessary textbooks, to operate a rental system of textbook distribution to the children in the public high schools, and to provide free basal textbooks to the children in the elementary schools.

The State School Commission was created by legislative enactment in 1933. The Commission consists of the Lieutenant-Governor, ex efficio chairman, the State Superintendent of Public Instruction, vice-chairman, the State Treasurer, and one member from each of the eleven congressional districts appointed by the Governor for a term of two years. The services performed by the Commission are in the interests of economy, equality, and efficiency. These services include determining what schools are to be operated; the redistricting of counties into a convenient number of districts and the classification of district and city administrative units; determining by districts and races the number of elementary and high school teachers to be paid from State funds, and setting the standard for operating the public schools for an eight-month term in each county and city administrative unit; the fixing of a standard salary schedule for teachers, principals, superintendents, and other school employees; the making of rules governing the financial management and control of all administrative units; providing and supervising transportation of pupils at public expense; and providing for the auditing of all school funds.

The State Board for Vocational Education was created by legislative enactment in 1917 to meet the requirements of the Smith-Hughes Bill enacted

by Congress. This Board cooperates with the Federal authorities in the administration of the Federal Vocational Act, administers legislation pursuant thereto enacted by the State of North Carolina, and administers the funds provided by the Federal and State governments for the promotion of vocational education in agriculture, trade, industry, and home economics. It has full authority to formulate plans for the promotion of vocational education in these subjects as an essential and integral part of the public school system, and to provide for the preparation of teachers in such subjects.

For administrative purposes the State has been divided into county and city administrative units, of which there are 100 of the former and 69 of the latter. If no city units have been established the whole county area is the administrative unit. In each county there is a county board of education of three or five members, nominated by the people and appointed by the General Assembly for a term of two, four, or six years. This board exercises general management and control over the educational affairs of the county administrative unit. In general, the board operates under the rules and regulations of the State School Commission, but it is vested with such discretionary powers in regard to the administration of the schools as are not specified by these rules and regulations or by law. It decides upon the site and character of all school buildings, but it is the duty of the county commissioners to approve and levy taxes for any part of the school budget that is to be financed by the county, including funds for the erection and repair of necessary school buildings.

The county superintendent of education, who is the chief executive officer of the county board of education, is appointed by the latter for a term of two years. The teachers and principals, however, are chosen by the local district committee, of which there are about 825, subject to the approval of the county board of education.

For the city administrative units, boards of trustees or boards of education are elected or appointed in the manner prescribed by law, and have powers over budgetary affairs, their decisions being subject to the approval of the county board of education and county board of commissioners. A city superintendent, appointed by the city board of education for two years, subject to the approval of the State Superintendent of Public Instruction and the State School Commission, is the chief administrative officer of the city board. City teachers are elected by the city board upon the recommendation of the superintendent.

During the school year 1937-38, there were 4,190 public elementary schools and 946 public high schools in operation in the State. Of these, 589 elementary and 832 high schools met State standards for the accredited rating. The Constitution provides that all children between the ages of six and twenty-one are entitled to attend the public schools, and the law requires that all children between seven and thirteen years of age, inclusive, shall attend for the term the school operates, the standard term now being eight months. Out of about one million children of school age, there were enrolled 882,006 pupils in the primary and secondary schools during the year 1937-38, and the attendance represented 86.5 per cent of the enrollment. Responsible for the

instruction of these pupils were 24,899 teachers, 17,933 white and 6,966 colored. The average annual salary of teachers for the year 1936-37, exclusive of principals and vocational teachers, was $748.03, or an average of $820.44 for white teachers, and $570.59 for colored teachers. The average training of white teachers was 3.71 years of college work and for colored teachers it was 3.12 years of college work. Thus far no retirement system for teachers has been provided.

Through enactment of Chapter 562, the General Assembly of 1933, provided for the operation of a uniform system of schools in the whole State for a term of eight months without the levy of any ad valorem tax therefor. This act also provides that, with the approval of the electorate, the local educational authorities may supplement the funds alloted by the State, in order to operate schools on a higher standard than that provided by State support in the respective administrative unit. Moreover, capital outlay and debt service remained a local responsibility.

A summary of the annual expenditures in behalf of public schools for the five years 1934-38, both inclusive, appears in the following table:

Year	Total-Expenditures	Source of Funds	
		State	Local
1933-34	$24,948,131.38	$16,340,057.51	$ 8,608,073.87
1934-35	28,848,727.67	17,138,565.26	11,710,162.41
1935-36	34,413,592.69	20,505,321.44	13,908,271.25
1936-37	38,972,833.34	21,718,667.35	17,254,165.99
1937-38*	38,125,782.89	24,342,926.58	13,782,859.31

Cooperative measures between the educational and health authorities for the promotion of health and hygiene among school children have been described in preceding sections of this report, particularly in the section on Preventive Medicine. Within recent years, too, the school authorities have endeavored to institute a sound program of physical and safety education. To this end the State Board of Education has employed a trained, full-time physical educator to organize and promote the work. In 1938 twenty-three full-time certified physical and health education teachers were employed in eleven high schools, and thirty-five schools employed forty-six teachers who devoted part of their time to regular physical education classes. In other schools a certain amount of physical education work was carried on by regular classroom teachers.

Realizing, however, that full advantage has not been taken of the opportunity to bring the maximum benefits of adequate training in health promotion and conservation to the 882,000 pupils enrolled in the public schools, the State health and education authorities recently adopted a plan to coordinate and integrate the health education services in the schools under an agency responsible to the State Health Officer and the State Superintendent of Public Instruction (See g. page 82).

In addition to its system of free public schools, the State supports several institutions of higher learning. Principal among these are the Greater University comprising the University of North Carolina, at Chapel Hill, State

* The local expenditures for the year 1937-38 are based upon budget estimates, which according to the State educational authorities are sufficiently accurate for all practical purposes. The total of the local expenditures for that year comprises: $4,808,475.10 for current expenses; $3,249,328.11 for capital outlay, and $5,725,053.10 for debt service.

College, at Raleigh, and North Carolina College for Women, at Greensboro. The other institutions include the three State teachers colleges for white women, and three standard and two junior colleges for Negroes. There is also a State supported standard normal school for Indians. At Morganton there is a State school (white) for the deaf, and at Raleigh, a State school for the blind and deaf with separate divisions, plants, and locations for white and Negro students.

In the private or denominational group there are 16 standard four-year colleges (white), including Davidson, Duke, and Wake Forest; twenty standard junior colleges (white); and five standard and three junior colleges for Negroes.[1]

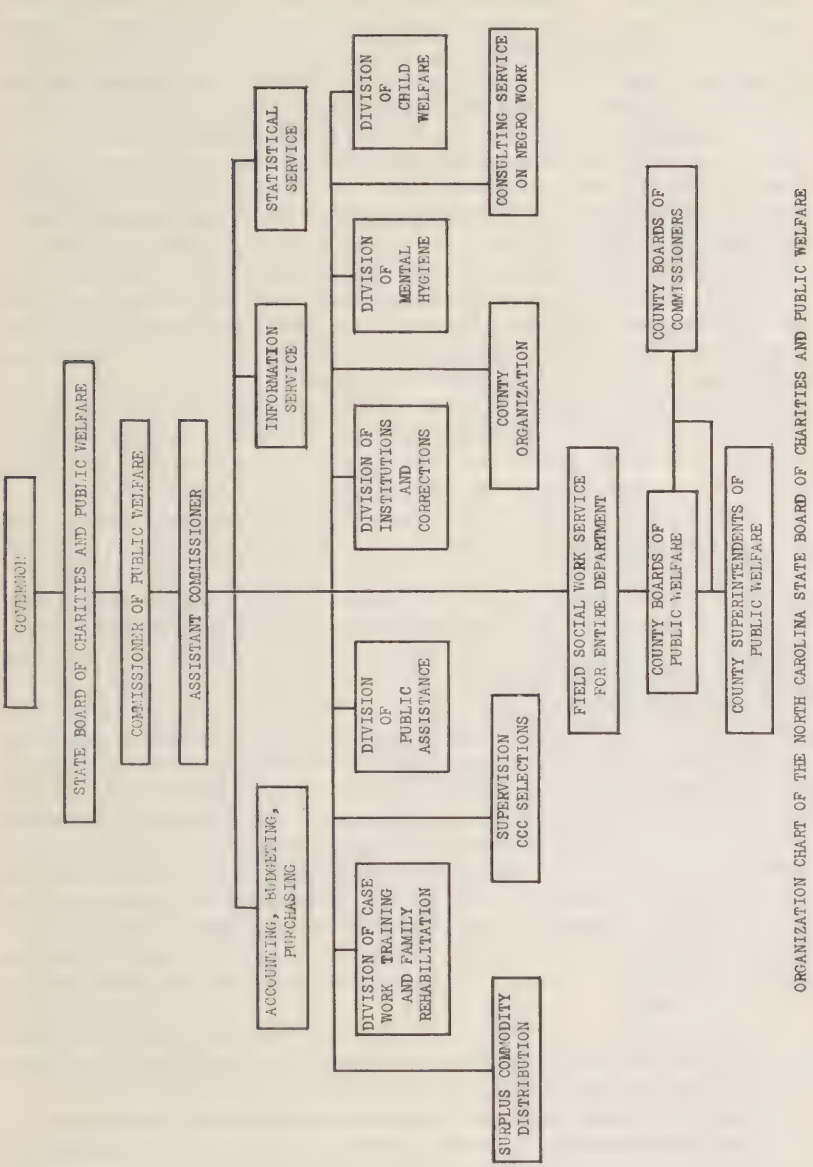
6. Social Welfare Services

a. *The State Organization*

1. *The State Board of Charities and Public Welfare.*—The State of North Carolina officially accepted its responsibility for the establishment and maintenance of standards of social welfare among its needy citizens in 1868. The State Constitution, which was adopted that year, directed that the General Assembly at its first session "appoint and define the duties of a Board of Public Charities, to whom shall be entrusted the supervision of all charitable and penal State institutions, and who shall annually report to the Governor upon their condition, with suggestions for their improvement." A board was duly appointed but no appropriation was made for pay or expenses, and no notable achievements were accomplished during the following two decades. With the appointment of Captain C. B. Denson as secretary in 1889, many reforms were instituted and welfare activities were definitely extended. In 1917 the General Assembly created the North Carolina State Board of Charities and Public Welfare and greatly expanded the scope of the State's welfare activities. In 1919 laws were passed requiring the organization of an official welfare department and the establishment of a juvenile court in every county, with clerks of superior courts to act as judges. Under the law as amended by Chapter 319 of 1937 the State Board of Charities and Public Welfare consists of an unpaid board of seven members, one of whom must be a woman. Members are elected by the General Assembly, upon the recommendation of the Governor, for a term of six years. The terms of two members expire every two years. The Commissioner of Welfare, who is the executive head of the operating staff of the Board, that is, the State Department of Public Welfare, is appointed by the Board, by and with the approval of the Governor, for an indefinite term. Such appointee is required to be a "trained investigator of social service problems." Moreover, it is one of the duties of the Board "to employ such other inspectors, officers, and agents as it may deem needful in the discharge of its duties." In addition to the Commissioner the personnel of the Department includes an assistant commissioner and about 188 other employees.

a). *The Administrative Office.*—The general office staff of the Department, under the Commissioner and Assistant Commissioner, transacts business

[1] See Tables No. 8 and 9 (Appendix) for Standard-Four-Year Colleges.



ORGANIZATION CHART OF THE NORTH CAROLINA STATE BOARD OF CHARITIES AND PUBLIC WELFARE

matters, maintains a library, operates an information service, performs statistical services, and attends to administrative matters in general. Classified as a part of the administrative office also, and directly responsible to the Assistant Commissioner, are the ten field social work representatives who serve as the principal link between the various divisions of the State Department (to be described later) and the County Welfare Departments.

That the several functions of the State Department may be properly coordinated, directed, and supervised, there have been created five divisions; namely, Child Welfare, Public Assistance, Case Work Training and Family Rehabilitation, Mental Hygiene, and Institutions and Corrections. There are in the State Department, also, four service units, concerned especially with: (a) county organization, (b) surplus commodity distribution, (c) work among Negroes, and (d) selection and certification of applicants for Civilian Conservation Corps. These departmental divisions and service units are shown diagramatically in the accompanying chart.

b). *The Division of Child Welfare.*—Through legislation enacted by the General Assembly of 1917, the State Board of Charities and Public Welfare was directed "to study and promote the welfare of the dependent and delinquent child and to provide, either directly or through a bureau of the board, for the placing and supervision of dependent, delinquent, and defective children. In 1920, when the Division of Child Welfare was created, the Board was able to expand the scope of its program to include the care of children outside of their own homes and in institutions or foster homes. Subsequently, additional responsibilities were undertaken such as, for example, the administration and supervision of the State Mothers' Aid Fund as provided by the General Assembly of 1923.

With State acceptance and adoption of the provisions of the Federal Social Security Act, and with establishment of other divisions within the Department, there has been some change in the responsibilities of the Division of Child Welfare. The duties of this Division are now as follows: (1) care of children outside their homes or in substitute or foster homes; (2) special casework service to children who, though living with their families, present personality and behavior problems; (3) improvement and enlargement of facilities for foster care; and (4) joining forces with all agencies in the children's field in a sincere, cooperative effort to determine what groups of children in the State are most neglected by both the public and the private children's agencies and how the child welfare program can be adapted to care for their needs." Correspondence and casework with families and adults was transferred to the Division of Casework Training and Family Rehabilitation, and the administration of the funds for care of children in their own homes was made a responsibility of the Division of Public Assistance.

The State and county public welfare agencies are mutually responsible by law for the administration of certain specific measures for the protection of children. The relationship between these or between either of these and a private agency, which must be licensed and supervised by the State, "is rooted in a common concern for proper care of the underprivileged children of the State needing service, and a mutual desire and effort to utilize all re-

sources both public and private to provide the service. The approach to the common task is through the recognition of minimum standards, and the development of a broad, flexible program adapted to the needs of all handicapped children. Such relationship and approach protect both the child and the standard agency from exploitation by persons and agencies whose motives are self-service rather than service to children." The present trend is that of preserving the home or of placing children in foster homes rather than in institutions.

In 1938 there were twenty-seven approved orphanages in the State which cared for 4,441 children. Of these institutions, 18 were supported by religious organizations, 5 by fraternal orders, 3 by communities, and one by a county. Only three of the institutions are licensed as temporary care homes for children. In connection with the handling of approximately 2,650 cases each year by the 108 juvenile courts in the State, seven counties maintain detention quarters, some use a boarding home-probation-system for juveniles, but many continue to confine children to jail, illegally. As of June 30, 1938, there were 911 juveniles confined in training schools, 73 in detention quarters, and 106 in county jails.

As previously stated, the administration of the funds for the care of children in their own homes, in accordance with the Act for Aid to Dependent Children, is now a responsibility of the Division of Public Assistance. The placing of children in foster homes, however, is undertaken by juvenile courts and private agencies, the Board's responsibility in behalf of these children being executed by the Division of Child Welfare. The probation officers for the juvenile courts, who are usually members of the staffs of County Welfare Departments and render casework service in behalf of foster children, must be approved by the State Board. During the year 1937 two private children's agencies rendered services to a total of 704 children. Apart from participating in Social Security provisions for Aid to Dependent children, the State has appropriated annually since 1931 about $5,000, which is known as the State Boarding Home Fund. Counties share this fund on a 50-50 basis. Foster homes are inspected and licensed by the Division of Child Welfare and definite standards must be adhered to. In 1937-38 65 children from thirty-eight counties were cared for through State and county boarding home funds at a cost of $11,212. The number of boarding months totaled 629, and the average cost for board per child per month was $17.82. Licensed boarding homes in the State increased from 28 in 13 counties in 1936, to 57 in 29 counties in 1938.

There are four maternity homes in North Carolina, located at Charlotte, Asheville, Greensboro, and Durham. These institutions are for the care of unmarried expectant mothers, and they provide accommodation for 100 patients. The chief function of the home is to provide proper prenatal, natal, and postnatal care for these mothers and their children. An additional service is to retrain young women to enable them to make a satisfactory emotional and social adjustment when they are discharged. These homes are not permitted to do any child placing. General supervision of them, including licensing, is exercised by the Division of Child Welfare.

In April, 1936, the State became eligible to participate in the following provisions of the Social Security Act, Title V, Section 3: "(a) for developing State services for the encouragement and assistance of adequate methods of community child welfare organization in areas predominantly rural and other areas of special need; and (b) for payment of part of the cost of district, county, or other local child-welfare services in areas predominantly rural." Under this plan, the fundamental activity involves the placement, maintenance, and supervision of adequately trained child welfare assistants on the staffs of county departments of public welfare. Special projects under the plan include the development of a demonstration and training area, consisting of the counties of Durham, Chatham, and Orange, in cooperation with these county governments and the University of North Carolina; a project in connection with the State training school for delinquent children; psychological services for children; research in intelligence rating of public school children; participation in the study of the population of child-caring institutions; consultant service on children's problems which had no special children's workers; and provision for educational leave for employees of child welfare services.

Child welfare assistants are placed in counties only upon a formal request signed by the judge of the juvenile court, the chairman of the county welfare board, the chairman of the board of county commissioners, and the superintendent of welfare. The work of the child welfare assistants is supervised by the three case consultants on the staff of the State Division of Child Welfare, one of these being a psychiatric social worker. It is noteworthy that several of the counties have voluntarily agreed to assume part of the salary and traveling expenses, sometimes including out-of-county mileage, of their child welfare workers, as well as to furnish office space and stenographic services. Progress in obtaining county participation in the cost of this work is shown by the fact that as of June 30, 1938, fifteen child welfare assistants had been placed in fourteen counties, and arrangements had been completed for placements in three others.

c). *The Division of Public Assistance.*—The 1937 session of the General Assembly enacted legislation (Chapter 288, laws of 1937) to provide old age assistance and aid to dependent children in accordance with provisions of the Federal Social Security Act. In the same statute the State legislature provided for the establishment of a Division of Public Assistance and a State Board of Allotments and Appeal within the State Board of Charities and Public Welfare.

The Division of Public Assistance was established and began to function officially on July 1, 1937. The Division "is responsible for all fiscal matters relative to old age assistance and aid to dependent children, including: keeping the Social Security Board informed as to both the needs of the State and the laws, policies, and procedures of administration; working out, with each county, allotments and quotas consistent with the need and the funds available; and writing all assistance checks, sending them to the local welfare departments for distribution to recipients." Furthermore, the Division "is responsible for receiving and checking all applications for old age assistance

and aid to dependent children and all forms pertaining to those applications, in order to help the counties maintain the validity of their case loads, by keeping within the laws and policies of the State and Federal offices."

Through the State Board of Allotments—consisting of the Chairman of the State Board of Charities and Public Welfare, the State Commissioner, and the Director of the Division of Public Assistance—the Division endeavors to strengthen the relationship between the county welfare departments and the client by vouchsafing to the latter an unbiased hearing and by explaining policies and procedures as they relate to him. Every effort is made, also, to coordinate the services of this Division with those of the other divisions of the department and to function in close cooperation with county welfare departments.

(1). *Old Age Assistance.*—Assistance under this category is granted on a budget deficiency basis, that is, the amount of income which an applicant may have is deducted from the amount he needs, and the difference between the two is the amount of assistance that is to be given. In determining the actual needs of an individual the existing conditions in each case are to be considered, and the amount of assistance in supplementation to any other income is to be sufficient to provide subsistence compatible with decency and health. In no case, however, is the amount of assistance to exceed thirty dollars per month or $360 a year. Funds to meet these payments are derived in the proportion of one-half from Federal funds, one-fourth from State funds, and one-fourth from county funds. The provisions of the law are mandatory on the State and every county, and full authority is given the boards of county commissioners to levy, impose, and collect the required taxes. The law provides the usual eligibility requirements as to age, citizenship, residency, and economic dependency, and safeguards the State against illegal claims and fraudulent practices.

Total old age assistance grants for the fiscal year ending June 30, 1938, amounted to $2,209,869.29, of which the Federal Government contributed $1,104,934.63, the State $604,266.37, and the counties $500,668.29. A total of 33,060 persons had been accepted for the old age assistance and were receiving average monthly grants of $8.97, or about half the national average.

(2). *Aid to Dependent Children.*—The Mother's Aid Fund provided the principal means of public support to the dependent child from July 1, 1923, to July 1, 1937. For this purpose the State appropriated annually about $50,000, which was to be matched by an equal amount from the counties; and administration of the joint funds was supervised by the State Division of Child Welfare. Participation on the part of the counties was entirely voluntary, which accounted for the fact that less than half of them engaged in this type of assistance. On July 1, 1937, the law providing for mother's aid having been repealed, responsibility for aid to dependent children was transferred to the Division of Public Assistance.

Whereas, under the Mothers' Aid Law the recipient of assistance could be none other than the child's own mother, and then only if she met certain qualifications, the new law enumerates several other relatives in addition to the mother. Moreover, the only qualifications required of such relatives is

that a "safe and proper home," shall be maintained for the child. The maximum age limit for eligibility, which was fourteen years under the Mothers' Assistance Law, was increased to sixteen years under the Aid to Dependent Children Act. The provisions of the latter law are mandatory on the State and every county, and assistance funds are derived equally from the Federal Government, the State, and the County. The maximum amount of assistance is not to exceed $18 per month for one child and $12 for each additional child in the home. As of June 30, 1938, there were 22,196 children in 7,959 North Carolina families who had been paid a total of $816,284.93 in the form of assistance payments during the preceding twelve months.

d). *The Division of Casework Training and Family Rehabilitation.*—Prior to July 1, 1937, this service was designated the Division of Field Social Work, and was responsible for the supervision of ten field representatives. The field work of the new Division, except the conduct of the one-day institutes given by the director, still is performed by the field representatives of the State Department.

The present functions of the Division which, basically, are intended to advance the knowledge and to improve the efficiency of both State and local staffs include: (1) the training of welfare workers through institutes conducted by the director and through in-service training under supervision; (2) special casework training in the technique and philosophy of the management of cases involving family rehabilitation; (3) supervisory responsibility in the referral service of county welfare departments to the W. P. A., N. Y. A., and authorities for surplus commodity distribution; (4) the handling of out-of-state inquiries concerning families, and correspondence concerning general relief; and (5) responsibility for the preparation of plans for the annual public welfare institute sponsored by the State Board and the Division of Public Welfare and Social Work, University of North Carolina.

Social workers are constantly urged to take full advantage of opportunities which include a leave of absence on half pay for further training in professional schools of social work. Many members of the State and county staffs have secured training at the State University.

e) *The Division of Mental Hygiene.*—For a period of about 17 years Harry W. Crane, Ph.D., professor of abnormal psychology at the University of North Carolina, served as a director of this Division, devoting one-third of his time to the work. Since his resignation in 1937 two psychologists, who were his assistants, have carried on the following activities: (1) clinical services, (2) educational services, (3) the acquiring and filing of data, and (4) the inspection of State and private institutions for the mentally diseased and mentally deficient.

During the biennium ending June 30, 1938, 1,740 individual cases were examined. For the satisfactory completion of these examinations it was necessary for the clinicians to interview many people familiar with the patient, to investigate the patient's home, school, or institutional environment, and to prepare written reports on each case. The intelligence quotients of those in this group varied from less than 20 for 28 children, to 140 for one child. The largest group, 1,319, or 75.8 per cent, had quotients lower than 80, and 1,527,

or 87.7 per cent, had quotients of 90 or less, indicating varying degrees of feeblemindedness. The examinations made disclosed cases of epilepsy, psychoses, sexual disturbances, and behavior problems. It is of interest to note that the demands for clinical services in this field were far greater than the limited staff of this division was able to render, and that referrals during the period 1936-38 in the order of frequency, were made by the following agencies:

1.	Child welfare assistance	489
2.	State departments and institutions	409
3.	School superintendents	315
4.	County superintendents of welfare	275
5.	Orphanages	148
6.	Miscellaneous	48
7.	City welfare departments	42
8.	Probation officers	8
9.	County health officers	6

f) *The Division of Institutions and Corrections.*—The staff of this division consists of a director, a field agent, a consultant on intake and discharge to and from the four state correctional institutions, three institutional case workers, and one statistical clerk and secretary.

The State Board, through this Division, discharges its legal responsibility of inspecting and supervising the whole system of charitable and penal institutions of the State.

Each of the State institutions has its own board of trustees or directors, and the supervision exercised by the State Board involves making inspections and recommendations, investigations of complaints, and assistance in planning programs and establishing policies.

On June 30, 1938, these State and county supported charitable, correctional, and penal institutions had a total population of 23,805 inmates—a population larger than that of any one of fifty counties of the State. Of these, 12,258, or more than 50 per cent, were confined in State and county penal and correctional institutions. In the three State mental hospitals and the school for the feebleminded there were 7,347 inmates; in the 82 county homes, 2,788; in State and county tuberculosis sanatoria, 1,211; in the State Orthopedic Hospital, 158; and in the State Homes for the Confederate Aged, 43 inmates. (See Appendix, Table No. 7).

Other duties of the Division are: "to assist in the coordination of community and institutional efforts in the care and treatment of delinquent children by encouraging the development and use of local provisions for such children—reserving institutional care only for those children who cannot be handled successfully otherwise—and by promoting better supervision of delinquent children conditionally released from State institutions; to cooperate with the Federal Bureau of Prisons and the prison organization of the various states in securing social data in regard to prisoners whose residence or whose families are in North Carolina; to conduct pertinent research and act as a clearing house for State and county institutional statistics and information; to publish and distribute State institutional biennial reports in cooperation with State institutions; and other services which the Division may be called upon to render."

The services of the staff members of the State mental hospitals have been confined almost entirely within the institutions. None of these hospitals is rendering mental hygiene services or has established an outpatient service providing diagnostic and treatment clinics to serve their respective communities. Aside from the clinical activities of the Division of Mental Hygiene, previously mentioned, services to the public in the field of mental health appear to have been limited to those undertaken by the psychiatric service at Duke Hospital, by the psychologist at the Caswell Training School, and by a few private psychiatrists.

g) *Service Units of the State Board.*—The four service units of the State Board do not have the status of divisions, but work in close cooperation with State divisions and county welfare departments. The two units dealing with the selection and certification of applicants for Civilian Conservation Corps and with surplus commodity distribution, respectively, have been organized and are now operating on a statewide basis. With reference to the county organization unit, welfare departments have now been established in each of the hundred counties, and the Director of County Organization is concerned with raising the standards to be met by the county superintendents and other members of the county welfare staffs; with improving State and county relationships; with securing the active interest of the county welfare boards; with the establishment of working relationships with county commissioners; and with enlisting the cooperation and support of social and civic groups in the interpretation and promotion of the welfare program.

The consultant and field agent for work among Negroes serves all agencies that touch the life of the Negro. His duties are: (1) consultation on matters pertaining to welfare work among Negroes; (2) placement of Negro social workers; and (3) planning and conducting annual welfare institutes for Negro social workers.

2. *The Commission for the Blind and Schools for the Deaf and Blind.*—Through enactment of Chapter 53 of the public laws of 1935, there was created the North Carolina Commission for the Blind. This Commission was composed of three unpaid members appointed by the Governor for a term of five years, and two ex-officio members—the Superintendent of the State School for the Blind and State Supervisor of Vocational Rehabilitation.

The duties of the Commission were:

1. To maintain a complete register of the blind in North Carolina, including a description of the condition, cause of blindness, capacity for education, and industrial training, and other pertinent information.
2. To maintain bureaus of information and industrial aid to assist the blind in finding employment and to teach them trades and occupations to be followed in their own homes and to assist in disposing of products of their home industry.
3. To provide training schools and workshops for the employment of suitable blind persons; to pay fair wages to blind workers; to devise means for the sale and distribution of products; and to provide lodging, tuition, support, and all necessary expenses for blind persons during their training or instruction in any suitable occupation, either within or without the State, as deemed advisable.
4. To make inquiries concerning the cause of blindness, to determine

what proportion of cases is preventable; and to provide free examinations and medical or surgical treatment for the blind whenever a qualified ophthalmologist considers that such person can be benefited thereby.

In 1937 the above-mentioned law was amended to enable the State to participate in the Federal Social Security Plan for aid to the blind. This amendment increased the membership of the Commission for the Blind to eleven; six members to be appointed by the Governor for terms of five years; and five ex-officio members, consisting, in addition to the two named above of the Secretary of the State Board of Health, the Director of the State Employment Service, and the State Commissioner of Public Welfare. All members of the Commission serve without pay, but a paid executive secretary is provided for. This amendment (Chapter 124, laws of 1937) charged the Commission for the Blind with responsibility for the supervision of the administration of assistance to the needy blind in addition to those duties imposed in Chapter 53 of 1935, as enumerated above.

The law prescribes the specific conditions under which State residents shall be eligible for relief to the needy blind; limits the amount of relief to a maximum of $30 per month for each individual; and directs the Commission to make all rules and regulations necessary for carrying out the provisions of the Act. The program, including all social case work, is administered locally by the county welfare departments, which serve as the local agents of the boards of county commissioners and the State Commission for the Blind.

Funds for the administration of sections of the 1935 law are provided entirely by the State, while funds for aid to the needy blind (Chapter 124 of 1937) are derived in the proportion of half from Federal funds, one-fourth from State funds, and one-fourth from county funds. During the fiscal year 1937-38, the State spent $43,370 under the provisions of the 1935 law, and, under the social security program of aid to the needy blind, there was a total expenditure of $287,084.15. Of the latter amount, $17,317.85 was expended for administration.

In the promotion of its training and rehabilitation work, the Commission has cooperated closely with official and private agencies, both of which are rendering most praiseworthy assistance. During the biennium ending June 30, 1938, a total of 6,505 indigent persons were examined by ophthalmologists. Of these, 2,180 were not amenable to treatment, 919 were recommended for operation, and 222 for treatment. Through treatment, 344 persons were eliminated from the classification of blindness.

The State law requires that every blind and deaf child of sound mind in North Carolina shall attend a school for the blind or deaf for a term of nine months each year between the ages of seven and eighteen years. Responsibility for placing such children in schools for the blind or deaf is placed upon parents, guardians, or custodians of these children.

To provide adequate and proper training for white and colored blind and deaf children the State maintains a school for white deaf children at Morganton, and the State School for the Blind and Deaf at Raleigh. The latter has a department for white blind children in west Raleigh, and a department for colored blind and deaf children in east Raleigh. These institutions are

under their own boards of directors and operate standard schools through the high school courses. In addition, pupils are given special training in such types of work as they are capable of undertaking. During the year 1937-38 the School at Raleigh enrolled 208 pupils in the white department, and in the colored departments, 88 blind and 100 deaf pupils.

b. *County Welfare Organizations*

1) *County Welfare Departments.*—A state law was passed in 1919, requiring the State Board of Charities and Public Welfare to appoint in each county three persons to be known as the county board of charities and public welfare. One board member was appointed each year for a term of three years, and members served without pay. County superintendents of welfare were elected in every county for a term of two years by the county board of education and the county board of commissioners. The superintendent's salary was fixed by these two boards. In any county with less than 32,000 population, where the county commissioners did not care to take part in the election of the county superintendent, the county superintendent of public instruction became, ex officio, county superintendent of public welfare, but without additional remuneration.

The provisions of the 1919 Act continued in force until 1937, when the General Assembly amended the law. Under the provisions of the revised law, the county boards of charities and public welfare consist of three unpaid members, one appointed by the board of county commissioners, one by the State Board of Charities and Public Welfare, and one selected by such two appointed members. Each member is appointed for a term of three years and the term of service of one member expires annually. No one is eligible to succeed himself after two successive terms as a board member. Each county board is required to meet at least once a month with the county superintendent of welfare and to advise him in regard to problems pertaining to his office.

The 1937 law makes it mandatory that each county, regardless of size or population, shall have a county superintendent of welfare. The superintendent, who must be approved by the State Board of Charities and Public Welfare, is appointed by the county board of welfare and the board of county commissioners in joint session, and serves on a full-time basis. After appointment, and approval by the State Board of Charities and Public Welfare, the superintendent becomes the executive officer and secretary of the county board. Although not retroactive for superintendents in service prior to April, 1936, minimum qualifications for these officials have been established by the State Board of Charities and Public Welfare. Under the law, the superintendent "shall be qualified by character, fitness, and experience to discharge the duties thereof." Provision is made whereby the governing bodies of cities may arrange with the county commissioners for joint city and county welfare work with such division of expenses as may be mutually agreed upon.

The duties of the county board of welfare and of the county superintendent, as defined by law, are many and varied. No legal provision is made as to the number of assistants a county superintendent of welfare is to have. As a

rule, each superintendent has a clerical assistant, many have one caseworker or more, and in several counties there is a child welfare worker.

2) *County Poor Relief.*—The board of commissioners of each county is authorized by law to provide by taxation for the maintenance of the poor, and to do everything expedient for their comfort and well ordering. The commissioners may employ biennially a competent person as superintendent of the county home for the aged and infirm and, "all persons who become chargeable to any county shall be maintained at the county home for the aged and infirm, or at such place or places as the board of commissioners select or agree upon. The commissioners of each county are authorized also to contract for a period not to exceed thirty years with public or private hospitals or institutions located within or without the county for the treatment and hospitalization of the sick and afflicted poor of the county upon such terms and conditions as may be agreed; provided the annual payments required under such contract shall not exceed $10,000. Such a contract is valid and binding without the approval of a majority of the qualified voters of the county.

Within recent years the State Board of Charities and Public Welfare has endeavored to promote the establishment of district hospital homes to replace ordinary county homes, and legal authority has been given for the establishment of such homes by any two or more adjacent counties. During the biennium ending June 30, 1938, four county homes were closed, leaving eighty-two such homes still in operation. In February, 1938, there were 2,911 inmates in the 82 county homes of the State. Of these, 3.2 per cent were children under 16 years of age; 53 per cent were persons between 16 and 65 years of age; and 43.8 per cent were over 65 years of age. A survey of these institutions indicates that 1,860, or 64 per cent, of the 2911 inmates, are likely eligible for some form of assistance through the Federal social security program for old age assistance, aid to dependent children, or aid to the blind. The remaining 1,051, or 36 per cent, are so incapacitated physically or mentally as to require institutional care.

It is one of the legal duties of the State Board of Charities and Public Welfare to have plans for district hospital homes prepared and to furnish these at cost on request to any board of trustees of a district hospital home. Moreover, all such homes must be built in accordance with plans furnished or approved by the State Board.

7. Agricultural Services

In a State like North Carolina, where about 75 per cent of the population is rural, and over 50 per cent actually live on farms, agriculture looms large in the lives of the people. The importance of efficient production and distribution to the welfare of those engaged in agriculture, and indeed to the entire population, has long been recognized by the State. In furtherance of the benefits of education in agriculture, the Constitution provides for a Commissioner of Agriculture, and requires that the General Assembly "establish and maintain, in connection with the University, a Department of Agriculture, . . ."

a. *The Department of Agriculture.*—The North Carolina Department of Agriculture is under the control of the Commissioner of Agriculture, "with

the consent and advice of the Board of Agriculture." The Commissioner is elected by popular vote for a term of four years. The Board of Agriculture consists of the Commissioner, who is, ex officio, member and chairman thereof, and ten members from the state at large. The latter are appointed by the Governor, by and with the consent of the Senate, for terms of six years. Appointments are so arranged that at the end of two-year periods the terms of either three or four members expire. The functions of the Board of Agriculture (Chapter 174 of 1925) are strictly legislative and advisory, while all executive power in the Department is vested in the Commissioner. Within the Department there are fifteen divisions, each rendering important services to the farmers of the State. These services include: inspections, quarantines, and other regulatory and law enforcement work in connection with plant pests, insects affecting man and animals, and bee diseases; cooperative marketing; financial loans; the dissemination of information; the control of animal diseases; the analysis of feeds and fertilizers; the accurate labeling of seeds; the administration of the pure food laws and the sanitary inspection of bottling plants, creameries, ice cream plants, cheese factories, and bakeries; the testing of the cream content of milk, and the testing of scales and balancers used in weighing milk; and the maintenance of test farms. The Department of Agriculture operates on its own receipts from a tax on fertilizers, the sale of serum, proceeds from test farms, inspection services, etc. The receipts for 1937-38 amounted to $453,286 which, with a balance of $318,865 from the previous year, gave a total of $772,151 available. The expenditures for 1937-38 amounted to $459,849.

While the activities of this Department are principally concerned with the promotional aspects of agriculture, several phases of the work have a definite relation to public health. These relate to such matters as the control of animal diseases, including bovine tuberculosis, Bang's Disease, rabies, etc., and the administration of the pure food laws and sanitary inspections. Work to promote the production and use of adequate supplies of the foods essential to the health of human beings is left largely to the extension service of the State College of Agriculture. The Department, however, has succeeded in practically eliminating bovine tuberculosis from the State. In 1934 work for the control of Bang's Disease was inaugurated in cooperation with the Federal Government. After introducing the work throughout the counties of the State during the course of about three years, more intensive operations, on the area plan, were commenced in 1937. Whereas, originally the Federal Government financed most of the cost of this work, including indemnities, outlays for the latter purpose are now being shared by the State on a 50-50 basis.

b. *Agricultural Extension Work.*—The following excerpt from the 1937 report of the extension division of the State College succinctly describes this service: "The State College Agricultural Service, supported by Federal, State, and county appropriations, is an organization dedicated to the upbuilding of rural North Carolina. It is a part of the State College, and is the North Carolina branch of the nation-wide Extension Service of the United States Department of Agriculture.

In addition to the regular extension personnel, a number of specialists

and county farm agents are employed cooperatively by the Extension Service, the Tennessee Valley Authority, and the Soil Conservation Service to promote work which the Extension Service is doing in cooperation with these agencies.

There are 36 white men and 9 white women specialists who have been given intensive training in their respective fields of work, which include farm management, agricultural engineering, agronomy, dairying, beef cattle, swine, sheep, cotton, tobacco, insect and disease control, 4-H clubs, foods and nutrition, marketing, clothing, home management, and the like.

A district farm agent and a district home agent supervise extension work with white people in each of the five extension districts. There is also a white home agent-at-large. Extension work with Negroes is supervised by a State agent, a district farm agent and a district home agent, a subject matter specialist, and a 4-H club leader. Many of the white extension workers give part of their time to the program for Negroes.

The Extension Service was selected by the Federal Government to administer the Agricultural Adjustment Administration programs in crop control and in agricultural conservation. State AAA headquarters are maintained at the College where the officials in charge work closely with the extension leaders. The program is administered locally through the white farm agents and county committees elected by the farmers.

The publication department distributes news stories, pictures, and other information designed to acquaint the public with what the Extension Service is doing to convey definite information of value to rural people. It also edits, publishes, and distributes agricultural and home demonstration bulletins prepared by staff members of the Extension Service and Experiment Station.

The Extension Service cooperates with the North Carolina Agricultural Experiment Station, the Tennessee Valley Authority, the Soil Conservation Service, the Farm Security Administration, the Rural Electrification Administration, the National Youth Administration, the State Department of Agriculture, vocational agricultural teachers, and other agricultural agencies.

The projects conducted by the Extension Service in 1938 were carried out locally by 100 white county farm agents and 82 assistant agents serving in the 100 counties of the State; by 82 white home agents and two assistants in 82 counties; and by 28 Negro farm agents serving 30 counties and 15 Negro home agents in 15 counties. In addition to the economic improvement that results from this work among the farm population, the demonstrations and training in foods and nutrition, home management, dairying, clothing, etc., among members of adult and 4-H clubs are bound to exert a powerful influence upon the health of these farming communities. The growing recognition by these groups of the importance of health in these rural communities is reflected by the increase in the number of counties carrying foods and nutrition as their major project, and by the highly competitive county, district, and state health contests conducted annually by the 4-H clubs. The former program aims to have an ade-

quate supply and variety of food for the family produced on every farm; to have every member of the family practicing good food selection habits and free from ailments indicating faulty diet; and to have meals well prepared and planned to meet body needs.

8. Medical, Dental, and Public Health Associations

a. The Medical Society of the State of North Carolina.—This Society was organized on April 16, 1800. The Society is governed by a constitution and by-laws, and by the principles of medical ethics established by the American Medical Association. Those district and county medical societies which hold charters from the State organization are component societies, and the combined membership of these component societies constitutes the membership of the State Society. The total number of members as recorded in the transactions of the Society was 1,585, for 1938. Legal responsibility for granting licenses to practice in the State is vested in the State Board of Medical Examiners. This Board consists of seven members, elected by the State Society for a period of six years. The Medical Licensure and Practice Law defines the term *practicing*, and sets forth the conditions under which the examining board may grant or refuse to grant license to practice in the State.

The total number of physicians in North Carolina, as listed in the American Medical Directory for 1938, was 2,663. On the basis of the 1930 population (3,170,276) this would represent an average of one physician to 1,190 persons. The concentration of physicians in urban areas, however, has resulted in a marked variation in the proportion of physicians to population in urban and rural areas. In some communities the average is one physician to about 500 population, while in others there is one physician to 1,200 to 3,000, or more of population.

As to the relationships between the medical profession and the State and local health authorities in North Carolina, it may be recalled here that it was through the initiative of prominent physicians of the State that the original State Board of Health was organized. For several years the State Medical Society was the State Board of Health, and even now, the Society is legally authorized to appoint from its membership four of the Board members. Moreover, the State Board of Health is required by law (C.S. 7055) to hold its regular annual meeting at the same time and place as the State Medical Society, at which time the Secretary shall submit his annual report. Undoubtedly, these relationships have served to insure a clear understanding between the profession and the health executives, and to preserve a tradition of mutual co-operation in matters of common concern.

b. The North Carolina Dental Society.—This Society was organized on October 16, 1856, its membership being limited to the alumni of dental colleges practicing in the State. Annual meetings of the Society were held until the outbreak of the Civil War in 1861, and the Society was not reorganized until 1875. The Society is governed by a constitution and by-laws adopted in 1935, and a code of ethics adopted in 1928. It is a constituent society of the American Dental Association, and, at present,

has 585 active members on its roll. As to the total number of dentists in North Carolina, the report of the Secretary of the State Dental Examining Board gave 831 as having paid renewal license up to February 1st for the year 1938.

The North Carolina Board of Dental Examiners is the legal agency of the state for the regulation of the practice of dentistry. The Board consists of six members of the North Carolina Dental Society, elected by the Society and commissioned by the Governor for a period of three years. No person may engage in the practice of dentistry in the State without first having obtained a license for the purpose from the Board of Dental Examiners, or without first having obtained from the Board a certificate of renewal of license for each calendar year. In their effort to introduce preventive dentistry into the public schools and certain other State institutions, the State Board of Health has had the enthusiastic support of the Sate Dental Society, and at present there is scarcely a practicing dentist in the State who opposes the program now being carried out by the State Division of Oral Hygiene.

c. The North Carolina Health Officers Association.—This Association was organized on June 20, 1911, the stated purpose being: ". . . to bring into one organization the public health officers of the State of North Carolina so that by regular meetings and interchange of ideas they may secure more efficient cooperation, and uniform enforcement of sanitary laws and regulations, and for the better dissemination of such knowledge as will make more efficient the opinions of the profession in all scientific, legislative, public health, material and social affairs." Eligible for membership are any public health officers in the State who are in good moral and professional standing, and all members and employees of Boards of Health, either State, county, or municipal. About ten years ago the name of the Association was changed to: The North Carolina Public Health Association, and minor changes were made in the constitution and by-laws. Annual meetings are held at the same time and place as those of the State Medical Society.

9. Hospital Administration

Legal provision is made for a county, township, or town to establish a public hospital. A petition signed by 200 resident freeholders is presented to the governing body, asking that an annual tax be levied for the establishment and maintenance of a public hospital and specifying the maximum amount of money proposed to be expended in purchasing or building the hospital. The governing body submits the question to the qualified electors at the next general election or at a special election. The tax to be levied under such election shall not exceed 1/15 of one cent on the dollar for a period not to exceed 30 years and shall be for the issuance of bonds to provide funds for the purchase of a site and the erection of hospital buildings. The governing body submits to the electors at a regular or special election the question whether a tax of 1/15 of one cent on the dollar shall be levied upon the assessed property for the purchase of real estate for hospital purposes, for the construction of hospital buildings, and for

their maintenance, or for either or all of such purposes. If the majority of the voters favor such a tax, the governing body levies the tax, collects it as other taxes are collected, credits the revenue received to the "hospital fund" which shall be paid out on the order of the hospital trustees. If the majority of voters are in favor of the establishment of a hospital, the governing body appoints a hospital board of trustees consisting of 7 members—three of whom may be women—chosen from local citizens at large, who hold office until the next general election. Trustees then are selected by popular vote, provision being made whereby the terms of two members expire every two years. Practicing physicians are not eligible to become members of the board. Trustees are entitled to reimbursement only for cash expenditures made for personal expenses incurred as trustees. They are authorized to make and adopt by-laws and rules and regulations for their own guidance, and for the government of the hospital. They control all expenditures and are authorized to appoint, fix the compensation of, and remove, the hospital employees. Meetings are held at least once a month and records are kept of proceedings. Four members constitute a quorum. One trustee must visit and examine the hospital at least twice a month. Annual reports are to be made to the governing body. Trustees are denied pecuniary interests in purchase of supplies unless there is competitive bidding. Vacancies are filled by the governing body. All money received is deposited in the official treasury to the credit of the hospital fund and paid out upon warrants of the auditor when authenticated by vouchers of the board. Provision is made for the issuance of bonds. Plans and specifications for hospitals must be adopted by trustees and bids advertised according to law. Provision is made for the governing body to appropriate each year additional funds for the improvement and maintenance of the hospital. The trustees have power to accept donations. The benefits of the hospital are for the inhabitants and those stricken sick and injured in the hospital jurisdiction, but all except paupers shall pay for services and conduct themselves in accordance with regulations prescribed by the trustees; these benefits may be extended to non-residents by the board. All persons (physicians, nurses, attendants, patients, etc.) and all articles used or brought to the hospital are subject to the regulations prescribed by the board. A municipal hospital jurisdiction is specified. The conditions and privileges of physicians and nurses to practice in public hospitals are determined by the board. A training school for nurses may be established and maintained. For hospitals at the county seat, a room for the examination of the insane is to be provided. The board passes upon charity patients and fixes the compensation to be paid by other patients. Plans must be approved by the State Board of Health before a county or town sanatorium or a tuberculosis institution can be established. The local governing body may contract with the board of trustees for the hospitalization in the sanatorium department of indigent tuberculous residents.

The hospital number of the Journal of the American Medical Association (March 11, 1939) states that in 1938 North Carolina had a total of

157 hospitals with 17,647 beds. There were 113 general hospitals with 6,842 beds. The percentage of beds occupied in these during 1938 was 63.3, and eight hospitals were approved by the Council on Medical Education and Hospitals for general internship. The following tables classify the hospitals in the state by ownership and by service:

OWNERSHIP CLASSIFICATION

Government Hospitals	Number	Beds	Total Number	Total Beds
Federal	4	1,010		
State	9	8,451		
County	12	785		
City	3	380		
City-County	6	239	34	10,865
Non-Profit Hospitals	**Number**	**Beds**	**Total Number**	**Total Beds**
Church	15	1,056		
Fraternal	1	20		
Non-profit corporations	71	4,348	87	5,424
Proprietary	36	1,358	36	1,358
GRAND TOTAL			157	17,647

SERVICE CLASSIFICATIONS

Description	Number	Beds
General hospitals	113	6,842
Nervous and mental diseases	9	7,814
Tuberculosis	20	2,409
Maternity	1	45
Industrial	1	50
Eye, nose, and throat	3	62
Children's	4	155
Orthopedic	1	160
Hospital Departments of Institutions	3	75
Convalescent and rest	2	35
Total	157	17,647

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PART II

RECOMMENDATIONS WITH COMMENTS

A. INTRODUCTION

Part I of this study embodies an exposition of the present State and local health organizations of North Carolina. For purposes of orientation there have been included also: (1) a description of the State; (2) an analysis of population and fiscal data; and (3) a brief exposition of State and local governments, of closely interrelated government departments, of the plan for local government hospitals, and of the medical and dental associations. Part I is prerequisite to Part II which treats with recommendations.

In raising questions affecting the present State and county health organizations of North Carolina, the view is taken that modifications, which may be projected as a result, should not be introduced with such haste as to disrupt the advantages of continuity of program but should be effected as appropriate mutations in the normal evolutionary growth of the health organization, due consideration being given to expediency. A clear understanding of this viewpoint makes possible the inclusion of recommendations that would be controversial in character if revolutionary changes were contemplated without regard to contraindications presented by existing circumstances. Furthermore, the fundamental principles, a number of which are in conformity with existing practices and trends in North Carolina, are enumerated for the purpose of establishing basic reasons for certain recommendations presented hereafter and of setting forth guide posts which the State Health Officer may care to consider in the future development, in general, of his public health program:

1. That the employment of trained, whole-time personnel under conditions which permit the optimum utilization of their talents is indispensable to the efficient functioning of an organization;
2. That the full success of a public health organization is dependent upon the functional integration of its component parts —subdivisions of the State Health Department and the several local health units—as well as upon integration with allied government departments, such as education, welfare, and agriculture, so as to effect team work or co-ordinated effort in the attainment of objectives directly and indirectly concerned with the realization of the aims of the health department.
3. That primary emphasis, in the preparation of public health programs, be given to the solution of problems which are vulnerable to proved methods of attack.
4. That all non-government agencies, including physicians, dentists, and voluntary health organizations, which can participate advantageously in the attainment of health objectives be given the opportunity to render their several services in order that duplication of effort may be minimized, extra departmental facilities fully utilized, and harmonious relationships promoted.
5. That the professional staffs of government institutions which are in a position to contribute to the cause of public health, cooperate with public health field workers in conducting preventive

programs in order that the need of institutionalization of such patients may be reduced to a minimum as speedily as possible.

6. That the consolidation of related functions within the State Health Department should be provided for under a limited number of bureaus or divisions in order to reduce overhead administrative cost, to effect a greater degree of coherence, and to utilize funds saved thereby for the buildling up of the technical staffs of these divisions.

7. That the specialization of services within the State Department of Health be organized on an inter-divisional rather than an intra-divisional basis.

8. That primary responsibilities of the State Health Department and of the rural health departments are the development of specialized and generalized services, respectively, and that the policy of administrative interrelationship should be such that the generalized facilities of the rural health unit are complemented by the specialized services of the State in the execution of well-rounded local programs.

9. That legislative provisions relating to the duties of health administrators be expressed in broad terms, and that amplification be left to boards of health acting under regulatory powers delegated to them, due consideration being given by both legislative agencies to the need for latitude in the exercise of initiative, training, and experience on the part of trained health workers in the accomplishment of desirable health objectives.

B. RECOMMENDATIONS

1. Recommendations Pertaining to Boards of Health

a. That the laws governing local health jurisdiction be amended to provide for:

1) County boards of health consisting of the three ex-officio members as now provided for, and, in addition, of four elective members, comprising one physician, one dentist, and two public-spirited county residents, each elected for a term of four years.

2) Reasonable compensation for county board members when on actual duty.

3) The filling of vacancies occurring among the elected members of county boards.

4) The designation of the county health officer as the executive officer of the board, and

5) The creation of district boards of health, and the abolition of the several county boards of health of all counties that consolidate to establish a health district.

b. That a section be included in the Public Health Operating Manual devoted to administrative policies and procedures of State, county, and district boards of health.

Comments on A

The present law provides for a board of health in each county consisting of six members. The three ex-officio members—the chairman of the board of county commissioners, the mayor of the county seat or the clerk of the superior court, and the county superintendent of schools—elect the three other members (two physicians and a dentist) for a term of two years. If the provisions of the recommendations were put into effect, the elective members on the board would be in the majority, and the possibility of tie votes would be eliminated. Moreover, should the elective members

be chosen on a rotating basis for a term of four years, as suggested, these members of the board would not be subject to a turn-over every two years and their services should be of greater value to the health department because of the additional experience each member would acquire. Furthermore, the term of office of the elective members of county boards of health would then conform to the tenure of office of members of the State Board of Health.

The current legal requirement that the elected members of each county board of health shall comprise two physicians and one dentist seems to have been predicated upon the assumption that specific qualifications are desirable, with particular emphasis being placed on medicine and dentistry. At the time this law was passed (1911), the state department of health had not reached its present stage of development nor had any of the counties employed full-time trained health officers. County boards of health, with the assistance of county physicians and quarantine officers, were responsible for such local public health activities as were undertaken. Under these circumstances board members with a professional background were desirable in order to enable the Board to exercise competent judgment in technical matters. With the guidance in specialized fields now provided by the State Board of Health through the employment of specialists on the staffs of its divisions, and with the employment of full-time trained and experienced local health officers, the need for professional representation on county boards of health has been reduced. The board, possessing legal powers for controlling its operating staff with respect to the establishment of policies and public health administrative matters in general, should now function essentially as a proxy for the people, to the end that the public may place responsibility on a small group of representative, public-spirited citizens for looking after the public interests in the field of health, for providing adequate public funds and employing competent personnel, for assisting and facilitating the efforts of the operating staff in the formulation and execution of a suitable health program, and for evaluating the performance of the paid personnel of the local health department. To provide a board to fulfill these requirements, and to avoid the loss of services of some of the leading citizens on the local board of health, the legal qualifications for membership on the board might well be broadened to include, in addition to one physician and one dentist, two public-spirited local residents who have real interest in, and knowledge of, public affairs.

No legal authorization for the compensation of board members for the services they render now exists, nor is there any specific provision for filling vacancies occurring among elected members. When the law is amended, therefore, these items should be included.

The relationship of the county health officer to the county board of health in the existing law is not specified. The recommendation made in this respect is designed to clarify the law and to provide that the responsibility of the county health officer to the local board of health be placed

more in alignment with that of the State Health Officer to the State Board of Health.

Under the present law, each county constituting a part of a health district has a board of health to which the local health officer is responsible and with which he has to work. No single official board legally responsible for health matters throughout the district is provided for, hence in order to eliminate this divided responsibility, to conserve the health officer's time, and to unify operations and provide uniform legislation for the district, it is recommended that all boards of health of counties forming a district be abolished and replaced by a single district board of health.

The jurisdiction of the district board would be over all counties and political subdivisions that unite to comprise the health district. It would exercise over the district the powers and duties that are now delegated, or may be delegated in the future, by State laws and State Board of Health regulations to county boards of health. We suggest that the membership of the board would consist of three ex-officio and four elected members. The ex-officio members could be a county commissioner, a superintendent of schools, and a mayor of one of the county towns, and might be chosen in one of two ways: (1) the county commissioners would meet jointly to select any county commissioner in the district as their representative on the board; the mayors of the county towns would meet jointly to select a member from among their number to represent them on the board; and the county superintendents of schools would convene to select a board representative from among them; or (2) should any or all of these groups fail to meet and appoint their representatives as indicated, the State Health Officer would be empowered to make the appointments.

With respect to the elected members of the board, the following provisions might be made:

1. Four members would be elected by the ex-officio members.
2. Any public-spirited resident of the district would be eligible for membership, except that one member would be a physician and one a dentist, and due consideration would be given to geographical representation within the district.

Furthermore, this proposed legislation should specify the term of office of elected members, the manner in which the board is to be organized, the frequency and method of calling meetings, the constitution of a quorum, how vacancies are to be filled, how and in what amount, members are to be remunerated for services rendered, and all other matters germaine to the effective functioning of the district board.

COMMENTS ON B

In North Carolina legal provision is made for 100 county boards of health in addition to the State Board of Health, comprising a total membership of 609 persons, of whom 206 are physicians, 200 are prominent government executives, 100 are county superintendents of schools, 101 are dentists, one is an engineer, and one a pharmacist. To bring into full

realization the vital services these citizens are in a strategic position to contribute to the cause of public health is a major administrative problem. Hence, for the purpose of taking an advanced step in this direction the recommendation is made that a section be included in the proposed public health operating manual (See Recommendation 18), devoted to an exposition of the role these boards should play. The subject matter presented should include directions for planning and conducting local board meetings and for carrying on a continuous health educational program in behalf of board members so as to facilitate their efforts to be informed regarding health developments in the State. The directions should specify that there be an executive session and an open session at which the presence of the staff as well as interested citizens are welcome, and they should include an enumeration of the responsibilities and duties of these boards. With reference to county, and proposed district, boards, agenda should be mailed to members in advance of meetings to give them an opportunity to familiarize themselves with the subject matter to be dealt with, and it is believed advisable also that delegates of each local board should be encouraged to attend the annual conference of State and local health officers. Apart from the stimulating effect the latter provision should have, this intermingling should bring out the fact that local departments of health are component parts of a large organization which should work closely together under the leadership of the State Board of Health in the attainment of common objectives. Furthermore, for suggestive value to those who may be called upon to prepare this section of the manual, the following views are being listed covering our conception of what the responsibilities and functions of boards of health should be: (1) that the official health organization of North Carolina is composed of State and local subdivisions of government, integrated functionally, and that the State and county counterparts are subdivided into (a) a *board* of control with certain regulatory powers, and (b) a *department* with executive functions; (2) that the boards in their respective spheres of influence represent the general public in matters pertaining to official public health administration, thereby (a) reflecting the attitudes of the general public towards health administrative procedures for the guidance of health executives in the discharge of responsibilities centered in them as trained health administrators for the formulation and execution of effective programs; (b) accepting public responsibility for lending support to health executives in building up and maintaining adequate State and local health departments; (c) accepting public responsibility for protecting State and local health departments in the efficient performance of their duties in the interests of the public as a whole from interference on the part of special interest groups; (d) passing upon the administrative policies and practices of the State and local health departments; (3) that the boards consider and pass upon, at least biennially, health programs projected by health executives and take such steps as may be necessary to evaluate the progress being made in the accomplishment of health objectives; (4) that

the boards review and pass upon budget estimates; (5) that the boards keep written records of their proceedings and of action taken at meetings held; (6) that the boards exercise regulatory powers through the enactment of rules and regulations; and (7) that the boards approve eligibility standards for the employment of health personnel, adopt policies pertaining to the conditions of employment and the administration of health personnel, and vouchsafe continuous tenure of office of employees during efficient performance of duty.

2. Recommendations Pertaining to State and Local Health Departments

a. That the operating staffs of boards of health be termed:

1. The State Health Department
2. The County Health Department
3. The District Health Department

b. That the State Health Department be reorganized into the following subdivisions:

1) Office of Administration
   a) The Division of Central Administration
      (1) The Section of Business Management
         (a) Employment and administration of personnel
         (b) Financial management
         (c) Filing service
         (d) Legal Services
      (2) The Section of Public Health Education
      (3) The Section of Public Health Nursing
   b) The Division of Local Administration
2) Divisions of Technical Services
   a) Statistical Methods
   b) Epidemiology
   c) Laboratories
   d) Sanitary Engineering
   e) Preventive Medicine
   f) Industrial Hygiene
   g) Oral Hygiene
3) Cooperating Agencies
   a) School Health Service
   b) Nutrition Service
   c) Mental Hygiene Service
   d) Group Research Service

Comment

With reference to terminology, the suggestion here implies that the term "Health Department" be used to mean the operating staff of a board of health. In North Carolina the term is not used in the law, except in the case of district health departments.

The staffs of county and district health departments are not differentiated into subdivisions because of their small size and the generalized nature of their work. The plan of organization presented for consideration here shows the State Health Department as divided into (1) Office of Administration, (2) Divisions of Technical Services, and (3) Cooperating Agencies. The Office of Administration is subdivided into two major

divisions: (a) the Division of Central Administration and (b) the Division of Local Administration—the latter being a transfer and change of designation of the present Division of County Health Work. In comparison with present arrangements, this plan, if adopted, would add to the Division of Central Administration a section of public health education and a section of public health nursing, and, to the Section of Business Management there would be added a subdivision of legal services. Seven divisions of technical services are listed and some of these, as shall be observed later, are broken down into subdivisions to provide a greater degree of specialization. Thus it may be seen that an attempt has been made to group the more generalized services, and those more intimately related administratively to the State Health Officer, under the Office of Administration.

The cooperating agencies consist of four services. One of these, school health service, is in the process of formation, and the other three are non-existent at present. Because the health department shares the responsibility for the development of these service agencies with other government departments, it is incorrect to consider them as wholly organized within the State Health Department. Since these services are, or are to be, organized in cooperation with other departments of the State Government, the facilities of the several departments participating can, it is believed, be more effectively integrated if such services are established and administered as cooperating agencies.

It is of the utmost importance that county and district health executives, as well as the directors of the subdivisions of the State Health Department, and of cooperating service agencies, fully realize that the services they administer are integral parts of a large, coherent organization and that the welfare of the whole, as well as of its parts, necessitates horizontal administration, as distinguished from vertical administration, through official channels under the direction of the State Health Officer.

3. Recommendations Pertaining to State, County, and District Health Officers

a. That the tenure of office of county and district health officers be established by law for at least a four-year term and that a mandatory retirement age be established.

b. That county and district health officers, who fulfill qualification standards established by the State Board of Health and whose performance in the field merit the distinction, be appointed deputy state health officers.

c. That county health officers be relieved of responsibilities in the field of therapeutic medicine, or that a whole-time medical assistant be employed on the staff of the county health department to assume these responsibilities and other duties in the field of preventive medicine assigned to him by the health officer; and that the position of county physician be abolished in counties composing a district health jurisdiction and in lieu thereof one whole-time medical assistant, or more than one if necessary, be employed on the staff of the district health department to assume therapeutic responsibilities and other duties in the field of preventive medicine assigned by the health officer.

d. That the appointment of part-time county health officers be disallowed by law and in lieu thereof it be made mandatory for all counties to establish whole-time health departments, or to unite with neighboring counties to become a part of whole-time district health departments (see also Rec. 5, a).

e. That the present duties and functions of the State and local health officers be modified, if need be, to enable them to perform the following services:

1) To select and dismiss subordinate personnel in accordance with provisions suggested in recommendation 4, d.
2) To exercise leadership in all matters pertaining to public health and to prepare, at least biennially, a projected health program (in case of the local health officer, with the counsel of the director of the Division of Local Administration) for the approval of their respective boards.
3) To direct the subordinate personnel of their respective departments in the execution of the approved program.
4) To execute with the aid of subordinate personnel, all laws and regulations applying to their respective jurisdictions.
5) To evaluate biennially, on the basis of accomplishments, the progress being made by the health department in the attainment of health objectives enumerated in the previously approved program for the biennium in question.

COMMENTS

a. *Tenure of Office and Retirement Age.* The present tenure of office, as established by law is for a two-year term. It is recommended that the law be changed, to specify a term of at least four years. This provision would bring the tenure of local health officers in alignment with the term prescribed for the State Health Officer. As an alternative, the period of appointment might be made indefinite, at the pleasure of the appointive power. The basis of tenure should be competency, and provisions to protect the competent in office and to weed out the unfit with dispatch should be worked out. This view is in alignment with the belief that these should be career positions in order that able persons may be attracted to them.

Sixty-five years is suggested as the age for retirement. A proviso might be made authorizing boards of health to extend the age of retirement to 70 in order that the public may not be denied the services of the exceptional health officer who retains full vigor of his faculties at the age of 65 years. The potential danger of such a proviso is that it will be abused in practice through misplaced human sympathy for a health officer who has passed his prime, whereas, the primary consideration should be what is best for the public.

b. *Deputy State Health Officer.* Such an arrangement is suggested as a means to promote further integration between the state and local health executives. By virtue of his position the local health officer is vested now only with the legal authority delegated by law and regulations to such executives. Were he to be appointed a deputy state health officer, he would also be vested with the authority to carry out the instructions of the State Health Officer, or his official representatives, in a restricted district of the State. Any question as to the wisdom of entrusting this additional authority to a local representative is largely obviated by the limiting provisions included as a part of the recommenda-

tion. Experience has shown that the arrangement works successfully in Maryland, where it is practiced.

c. *Therapeutic Medicine.* The role of health officer is in the field of preventive medicine, not therapeutic medicine. Probably the motive underlying the placement of therapeutic responsibilities on county health officers is to eliminate the expense of the employment of county physicians. Economic considerations, however, would not appear to justify the provision, from the viewpoint of the community, for a competent health officer should be able to invest the time that he is required to give in the discharge of therapeutic responsibilities, to better advantage in the field of preventive medicine. He has only so much time at his disposal, and the time it takes to care for the sick or perform autopsies at a coroner's inquest obviously cannot be avoided. These are emergency duties for which time must be taken, and more time is needed in keeping informed in the therapeutic field if he is to keep up to date, as he should, in practicing the profession. Hence, his public health responsibilities unavoidably suffer from serious neglect. It is believed that the suggestions included in the recommendation would bring about a correction and would further the primary interests of the county and district health departments.

d. *Part-time Position.* Since approximately 75 per cent of the counties of North Carolina are now organized on the full-time basis, since ample time has been devoted to proving the advantages of the full-time plan over the part-time, and since economic considerations have been obviated owing to provisions for poor counties to unite with neighboring counties to form health districts and to receive substantial state subsidies, the time would seem at hand for the law to be made mandatory for all counties of the State to be organized on a whole-time basis. The precedent set by the General Assembly in the organization of welfare services throughout the State on a whole-time basis should give promise to the hope that the Legislature would approve a similar authorization in behalf of the cause of public health.

e. *Duties of Health Officers.* In studying legal provisions enumerating the duties of health executives in North Carolina one is left with the impression that they are amply inclusive. Rather than looking upon his work as that of executing legal provisions that are specifically stated in the law, the health officer should appreciate fully that public health is a cooperative enterprise and that his primary responsibility is to exercise leadership in the formulation and execution of a program which meets the needs of the State and locality. He is employed by the community as an expert in the field of public health administration, and it is his responsibility to mobilize the assets of the community in carrying out a program which will protect the people from disease and which will also promote positive health. This attitude is in keeping with administration trends in North Carolina. The suggestions made in the recommendation submitted do not necessarily call for an amendment of the State laws, but are made primarily for such suggestive value as they may have.

4. RECOMMENDATIONS PERTAINING TO THE EMPLOYMENT AND ADMINISTRATION OF PERSONNEL

a. That the tenure of office and a retirement age of health executives and subordinate personnel be established by law.

b. That eligibility standards for key positions in the State Health Department be established by regulations of the State

Board of Health, and that the standards now in effect for the personnel of local health departments be amplified to include clerks.

c. That annual health examinations of all staff members of the State Health Department and of local health departments be made mandatory.

d. That the authority of local health officers to employ local personnel be made subject to qualifications established by the State Board of Health, and the authority to discharge local personnel be made subject to the approval of the State Health Officer.

COMMENTS

a. *Tenure of Office and Retirement Age of Health Personnel.* What has been said previously in comment on the tenure of office and retirement age of health officers (Recommendation 3, a) applies equally to all other employees of health departments. Efficiency in disease prevention and health promotion depends upon the proper functioning of an alert, energetic organization, and in health work, as in other important fields of endeavor, efficiency is not compatible with either insecurity of employment or superannuation.

b. *Eligibility Standards.* Although North Carolina has no State civil service regulations, the people of the State have been fortunate in the selections of State health officers that have been made for them by the State Board of Health. They have also been fortunate in the selections that these health officers have made of persons to serve as directors of the various subdivisions of the State Department of Health. All of these appointments have been made without any special statutory requirements pertaining thereto, except that the Executive Secretary of the State Board of Health, or the State Health Officer, must be a registered physician of North Carolina. Selection of personnel for other key-positions, such as directors of divisions of the State Department of Health are made by the State Health Officer. In matters of this kind, however, past experience cannot always serve as a sure criterion for the future, and in order that neither the State Board of Health nor the State Health Officer may find themselves subjected to pressure from political or other sources that may prove prejudicial to the best interests of the public health, it is recommended that the State Board of Health establish definite minimum qualifications for persons to be appointed to key-positions in the State Health Department. These health executives should be qualified as to training and experience in public health administration and should possess personal traits which will insure their being leaders in their respective fields. These safeguards should lead to the selection of such candidates for all future appointments.

c. *Annual Health Examinations.* An outstanding health protective measure that has been advocated by nearly all public health departments for a number of years has been a complete, annual medical examination for every individual. This, undoubtedly, is sound advice. When health officials advocate for the public a measure which they themselves, and members of their staff, fail to observe, however, the average individual begins to question either the sincerity of the proponent or the validity of the advice. If the adoption of this practice by the public is considered a worthy objective of a public health department, it would seem rational for the latter to insist that the members of its staff con-

form to what they are attempting to teach. Apart from the resulting benefit that the individual might derive, this should be of assistance to the State Health Officer in maintaining an efficient working organization, as well as serving as an excellent example to the public.

d. *Employment and Discharge of Personnel.* At the present time every full-time county or district health department in the State receives supplemental financial assistance from the State Board of Health. Under the contract providing for these subsidies, the local health officer has sole authority to employ, direct, and replace all other members of the staff of his department, it being understood that he is to employ only qualified individuals who meet the requirements outlined in the State Board's policies for the allocation of funds for health work. These requirements would seem to amply safeguard the public in those health jurisdictions that receive state subsidies, but, for jurisdictions receiving no such subsidies, qualification requirements for health personnel are wanting. It has been recommended elsewhere (See Recommendations 3 and 5) that the employment of part-time personnel be disallowed by law and that each county be required to provide sufficient funds to meet its equitable share of the cost of maintaining adequate whole-time county or district health departments. Such legislation might well include minimum qualifications established by the State Board of Health for all persons on the staffs of county or district health departments.

In order to maintain discipline and to insure efficiency, it is essential, of course, that each local health officer shall be in position to discharge subordinate members of his staff for justified cause. But by way of preventing the occasional exercise of autocratic or unreasonable action against an employee, and of safeguarding the health officer in this fundamental right from local interference, it is suggested that the dismissal of staff members by a local health officer be subject to the approval of the State Health Officer.

5. Recommendations Pertaining to Financial Management

a. That the General Assembly enact mandatory legislation requiring every county in the State to levy, impose, and collect a tax (as other taxes are collected) sufficient together with State and other available supplementary funds, to meet its equitable share of the costs required to establish and maintain adequate whole-time county or district health organizations.

b. That the management of financial matters for which the State Board of Health is responsible be consolidated as a unit directed by the Principal Accounting Secretary, operating immediately under the State Health Officer.

c. That the State's subsidy to county and district health departments be paid quarterly instead of monthly as now practiced.

d. That a standard method of bookkeeping be adopted for local health departments.

e. That arrangements be made for the official audit of accounts of local health departments periodically.

f. That inventories be made periodically of equipment in the custody of local health departments.

g. That the advantages of group or centralized purchasing be made available to local health departments.

h. That the possibility of the establishment of a retirement

fund for employees of the State and county health departments be investigated and, if found practical, that such steps be taken, as may be necessary, to bring into realization a suitably devised annuity plan.

COMMENTS

a. *Mandatory Legislation for Full-Time Local Health Departments.* The first whole-time county health department in North Carolina dates back to 1911, when such an organization was established in Guilford County. The operation of this, and similar services that followed in its wake, have convinced State and local authorities that such a plan offers the most promising method of safeguarding the public health of the State as a whole, and of the locality in particular, of any that has yet been devised. State and Federal recognition of the importance of such work has been reflected in the ever increasing financial support that has been forthcoming, and local recognition by the gradual increase in the number of whole-time county and district health departments. At the present time (June 30, 1938) there are forty-nine whole-time local health departments—forty single county units and nine units representing two to five counties—serving a total of sixty-seven counties. From experience in this State as well as in numerous others, the conclusion may fairly be drawn that local health work undertaken along the lines now being pursued in North Carolina has proved to be a highly satisfactory health protective procedure and is worthy of emulation by all counties in which no such developments are now in progress.

Realizing that county lines offer no barriers against the spread of disease, that unsatisfactory health conditions are a menace to adjacent counties, and that disease prevention and health promotion is as important as any service a government can render its citizens, the General Assemblies of 1917 and 1935 set aside appropriations to assist counties in their efforts to provide better local health services. Furthermore, the latter act authorized the State Board of Health to use any available funds at its command, not otherwise appropriated, to establish full-time local and district health department service for any town, city, and county or group of such units in the State where local authorities are willing to pay at least as much of the cost as is borne by the State. Thus in the case of counties where the taxable wealth is low and public funds somewhat scarce, the way was opened not only for receiving State subsidies for local health work, but also for such counties to pool their resources with those of one or more adjacent counties to establish a health district. Even with this stimulus, however, there are still thirty-three counties interspersed throughout the State that provide only part-time health service. In other words, the evident expectation that the above-mentioned legislation would lead to the provision of full-time health service in every county has not materialized. Moreover, it does not appear that an appreciable number of counties without such service is likely to provide it voluntarily in the very near future. Without any invidious attempt to provoke a discussion with regard to the relative importance of such public services as health, welfare, and education, all of which are closely interrelated, we may state that we are in full accord with the belief that every element of the State's population, both old and young, is entitled to adequate health protection. If, unfortunately, the local governing authorities of a few counties fail to appreciate

and to provide this service, then, as in the case of education and welfare, it should be made mandatory by the General Assembly.

b. *Consolidation of Financial Management, etc.* Prior to July 1, 1939, responsibility for cooperative budgets set up jointly by the State and local boards of health was lodged with an accountant who functioned directly under the Director of the Division of County Health Work. With the consolidation of this service, on the above mentioned date, under the Principal Accounting Secretary of the State Board of Health, this subsection of Recommendation 5 was placed in effect. If, therefore, satisfactory changes pertaining to subsections c, d, e, f, and g, which are self-explanatory, can be worked out, the accounting system of the department should be greatly simplified.

h. *Retirement Fund.* A discussion of the desirability of the establishment of a retirement fund is superfluous here except that it may be well to point to the following considerations: (1) Health employees, by-and-large, do not now enjoy the economic security necessary to attract young men and women with superior ability to public health as a career; and (2) the salaries received by health employees in general are not sufficient to enable them to set aside ample savings to allow them to retire before their period of usefulness has broken down. The adoption of a plan for the retirement of health employees should eliminate or lessen these adverse circumstances and therefore should work to the advantage of the State health officer in his effort to develop an efficient public health organization.

6. Recommendations Pertaining to Legal Services

a. That the duties of the legally trained employee responsible for the administration of the Bedding Law be expanded so as to include assisting (1) in the administration of such other legal services as may be required by State and local health departments, (2) the drafting of health bills, (3) the enforcement of health laws and regulations, and (4) the codification and clarification of health statutes.

b. That such legal health service be established as a section of the Division of Central Administration.

Comment

The General Assembly of 1923 enacted a law (Reference—Chapter 2 and subsequent amendments) to improve the sanitary conditions of the manufacture of bedding and to prevent fraudulent descriptions of the materials used therein. Responsibility for the enforcement of this law was placed upon the State Board of Health, and the actual execution of its provisions has been carried out by two inspectors employed by the Division of Sanitary Engineering. One of these inspectors has had legal training, has passed the North Carolina Bar examination, and is eligible to membership in the North Carolina Bar Association. The salaries and expenses of the inspectors are paid from funds derived from the sale of stamps and labels which are required to be affixed to mattresses, comforters, pads, pillows, etc., offered for sale.

The services rendered by these two inspectors are limited almost entirely to the prevention of fraudulent practices in the bedding industry. Their entire time is given to this work and they receive little or no assistance from State or local inspectors whose duty it is to prevent practices in other matters that may adversely affect the public health.

The administration of a large organization such as a State health department calls for the development of a number of specialties, such as laboratory service, sanitary engineering, and statistical service, as well as a high degree of integration of these services among themselves and with those of local health departments. In line with the establishment of these specialties, is the need for legal services in the field of public health law. Just as the Division of Sanitary Engineering calls upon the Division of Laboratories for laboratory service, so also should the divisions of the State Health Department and local health departments have available the services of a legally trained specialist who is particularly well versed in public health law. In considering the further development of a specialized legal service within the State Health Department, our thought is not to lay undue stress upon law enforcement nor to minimize the desirability of utilizing educational and persuasive measures to secure voluntary cooperation in complying with public health laws. The view taken is that health laws and regulations may demand the exercise of police powers under exceptional circumstances, and, since the North Carolina State Health Department already employs a person with legal training whose time is devoted to the administration of the Bedding Law, but whose experience with the Department should qualify him for additional legal services to State and local organizations, it would seem advisable that a section of legal services, in the office of Central Administration, be established under his direction. In assuming charge of this section, the director would not be expected to take over the functions of the Attorney-General or local district attorneys in prosecuting violators of public health laws in the courts of the State, but it would be his duty to undertake preliminary procedures when prosecutions appear to offer the only means of securing compliance with public health laws. Health officers in general, and local health officers in particular, are usually not very familiar with legal procedure, and they are at a disadvantage in interpreting and putting into effect some of the legal procedures incumbent upon them in the discharge of their responsibilities. The institution of suits against persons or corporations who contravene provisions of the law reacts unfavorably against local health officers, and the principle of having such officers do more than testify seems unwarranted. If local prosecutions could be handled by a competent State employee rather than by county or district health officers, the usefulness of the latter would be far less likely to be impaired.

As previously mentioned, the bedding inspection service throughout the State is conducted by two inspectors, without any assistance from local sanitary officers. This entails very considerable traveling expense, and, with such a large territory to be covered, there may be some question as to whether inspections are frequent enough to be entirely effective. Should responsibility for these routine inspections be handed over to sanitarians employed by local health departments, the State bedding staff would be in a position to function more in an advisory capacity in this field and to assume the duties enumerated in this recommendation. Thus, in consideration of the inspectional service rendered by local health personnel, the Section of Legal Services would share with local units the responsibilities arising from failure or refusal of persons to comply with health laws. If the training of local inspectors is such that they are not qualified to undertake the inspection of bedding, this work could be shifted to them gradually,

as they acquire knowledge of it under the supervision of the director of legal services. Moreover, the director could conduct a short course at the University where training of local sanitarians in this specialized field could be carried out.

7. RECOMMENDATIONS PERTAINING TO PUBLIC HEALTH EDUCATION

a. That the public health education services of the State Department of Health, now including: (1) those being carried out by the Division of Preventive Medicine and the Division of Oral Hygiene, and (2) the Publicity Service, be centralized into a section of public health education, Office of Central Administration; and, that the personnel of this section consist of a director, preferably a physician, who has specialized in public health education methods and/or has rendered distinguished services in this field, together with such subordinate personnel as may be necessary for the fulfillment of the functions of this Section.

b. That the director of this section be given the active support and cooperation of the directors of the several divisions of the State Department of Health and of local departments of health in the formulation, execution, and appraisal, through official channels, of a coordinated State and local health educational program, and that in addition to being responsible for exercising leadership in carrying out such a program, his duties, together with those of his subordinates, include that of (1) editor of publications, (2) custodian and distributor of printed matter, motion picture material, exhibits, etc., (3) educational secretary in charge of arrangements for public addresses, radio talks, programs of meetings, etc., (4) supervisor of library services, (5) assistant to the coordinator of school health services, and (6) advisor to county health officers, with respect to educational programs promoted within these local health jurisdictions.

COMMENT

Public health education activities in North Carolina are being carried out by the divisions of the State Department of Health as a part of their specialized intradivisional programs and by local health departments as a subsection of their generalized services. To further develop central leadership and to provide more adequately for a unified, balanced health educational program on a state-wide basis, which will coordinate more completely the facilities of each of the divisions of the State Department of Health and also those of local health departments, there would appear to be a need for the establishment of a section of public health education within the Division of Central Administration. At present the responsibility for central leadership in the development of a unified health educational program rests, in particular, upon the Director of the Division of Preventive Medicine. Because, in an organization that has reached the magnitude of the North Carolina State Department of Health, responsibilities in the fields of preventive medicine and public health education fully justify the employment of full-time directors for each of these services, the wisdom of continuing the double responsibilities of the Director of the Division of Preventive Medicine longer than is necessary to overcome such economic difficulties as now stand in the way of placing each service under a separate director, would appear to be open to serious question.

In the beginning the personnel of the section of public health education need not consist of more employees than the director,

the publicity director, and a secretary. As a basis for the formulation of a state-wide coordinated educational program the director should be given ample time to appraise the State's needs in the field of public health education and to familiarize himself thoroughly with all phases of the educational program now being carried out by the various divisions of the State Department of Health and of the several local health units. After this preliminary step has been carefully taken, the realization of the program so conceived might well be initiated during a suitable transition period through the continuation of the services of the existing educational facilities, the function of the director of the section being limited to leadership as a coordinator and to rendering, through official channels, supplemental technical supervision. Later, as the educational program gets under way and as circumstances arise which may make administrative modifications opportune, any subordinate employees of divisions of the State Department of Health who serve essentially as specialists in the educational field should be transferred to the staff of the section of public health education. When these transfers have been made or an adequate technical staff provided, the educational services of the Health Department should be carried out, insofar as practicable, by the section of public health education as an interdepartmental service rather than by the divisions of the State Department of Health as specialized intradivisional services. In the field of public health education this section would then serve the other divisions of the State Department of Health and local health departments as, in the field of laboratory work, the State Laboratory of Hygiene serves these component parts of the whole health organization. The directors of the various services would, of course, continue to share with the director of this section the responsibility for the development of adequate and effective educational programs as concerns their several fields of interest. Each of these specialized educational services, however, would constitute integral parts of the state health program, conceived as a whole, and these directors would be relieved of the duty of building up technical staffs and of providing equipment within their several divisions, for such subordinate employees would constitute the staff of the section of public health education and the equipment needed for carrying on the State's educational program would be centralized in this Division.

8. RECOMMENDATIONS PERTAINING TO PUBLIC HEALTH NURSING

a That the public health nursing services of the State Department of Health, now including (1) those being directed by the Division of County Health Work, and (2) those supported by the Division of Preventive Medicine, be centralized into a section of public health nursing, Office of Central Administration; and that the personnel of this section consist of a director, responsible to the State Health Officer, and such subordinate personnel as may be necessary for the fulfillment of the functions of the section.

b. That the director of this section advise or assist, through official channels, the directors of divisions and agencies of the State Health Department, employing nurses and operating special nursing services, and directors of local health departments in (a) the selection of nurses, (b) in the formulation, execution, and appraisal of coordinated state and local health nursing programs in their respective spheres of influence, and (c) in super-

vising the technical services of nurses employed by these subdivisions of the State and local health departments.

COMMENT

The establishment of a separate section of public health nursing is recommended because the organizational relationship of public health nursing to other services which make up the whole health organization is looked upon as interdepartmental in character. Owing to the fact that the effective realization of specialized programs of a number of the divisions of the State Department of Health is dependent upon nursing services and that the execution of these programs is being accomplished more and more through the integration of state facilities with those of local departments—that is, in accordance with those of local health departments—that is, in accordance with the policy of horizontal as distinguished from a vertical plan of administration—the recommendation further provides that this section be set up within the Division of Central Administration. The director of this section, with the assitance of subordinate staff members, would work with the directors of the other divisions of the State Department of Health and with directors of the local departments of health through the Division of County Health Work to the end that the special nursing interests of these State divisions and the generalized nursing interests of local health units would be harmonized through the formation of a unified, balanced, State-wide public health nursing program. The nurses employed by local health departments would, of course, operate under the immediate administrative supervision of their local medical directors, who, in turn, would be responsible administratively, insofar as State supervision may be applied to local units, to the Director of the Division of County Health Work. Apart from exercising central leadership in the formulation of a State-wide nursing program, the director of this section, with the assistance of her subordinate staff, would participate through official channels in the realization of it. The services rendered would also include: (1) aid in the selection of nursing personnel; (2) aid in the supervision of nursing techniques of local nurses and in the standardization of the content of each type of nursing visit; (3) assistance in the formulation of a plan which would provide for the continuous education of local field nurses; and (4) aid in the periodic appraisal of local nursing programs.

The staff of the section of public health nursing need not be large, but in addition to the director it would appear advisable to employ at least two additional supervisors. One of these would be stationed in, and have charge of, the coastal region of the State, and the other the western section of the State. The director would take charge of the central section of the State as well as supervise and direct the other two nurses on her staff. The plan of administration suggested precludes the employment of nurses as staff members of other divisions of the State Department of Health, it being understood that the needs of these divisions would be discharged through the staff of the section of public health nursing. The nurses on the staff of the section of public health nursing should, of course, possess superior qualifications with respect to general educational background, adequate specialized training in all phases of public health nursing, and suitable experience in performing the service each is called upon to supervise.

The trend in North Carolina pertaining to the administration of public health nursing service is in the general direction of the provisions of these recommendations, except that the central nursing service is set up as an intradivisional service of the Division of County Health Work. If the suggestions set forth here were to be put into effect, it would carry this trend a step beyond the stage of organization now reached. It would centralize responsibility for leadership in the formulation of a coordinated State and local public health nursing program in the hands of a director and subordinate assistants who are specialists in the field of public health nursing. The nursing service is coordinate from an organizational viewpiont with the other divisions composing the State Department of Health with respect to the magnitude of the staff involved and the importance of the program being developed. Hence, this change would be in keeping with the practice adhered to in providing direction to other specialists which have been organized as divisions of the State Department of Health. Precedent has also been established in the Division of Sanitary Engineering, for example, for the utilization of the services of a non-medical director of such specialized services.

9. Recommendations pertaining to administrative relationships between State and local health departments in the promotion of local health programs in general and between the health department and other agencies concerned in the promotion of their services cooperatively within a demonstration district of the state:

a. That the Division of County Health Work be transferred to and made a part of the Office of Administration; that its name be changed to the division of local administration; that its personnel be increased by the employment of two medical administrative assistants; and that the Director, with the assistance of his subordinates, function as:

1) A coordinator between the divisional directors of the State Department of Health and the directors of local health departments in the further development of general programs now being carried out in the local whole-time health jurisdictions of the State, and
2) A coordinator between the divisional directors of the State Department of Health and the health director of a local health department set up as a special demonstration or experimental area for the purpose of providing a proving ground for trying out new administrative and technical procedures prior to their introduction on a State-wide basis.

b. That the State Department of Health participate with other State departments, such as Education, Welfare, and Agriculture, and with other agencies concerned in the organization and promotion of an experimental district in the State for the purpose of projecting methods for the cooperative functioning of such services locally and testing out experimentally in the field the merit of such cooperation to the end:

1) That joint administrative cooperative projects such as a school health service (see Recommendation 2, b., 3) may be tried out in a proving ground prior to an introduction on a State-wide basis,
2) That joint basic research projects as, for example, epidemiological field investigations of syphilis and field nutri-

tion studies, may be conducted under the most advantageous circumstances possible, and

3) That a special administrative project may be undertaken to determine if it is practical to re-district the counties of the State into larger administrative jurisdictions to effect economy and efficiency of local administration.

COMMENT

In recent years rapid progress has been made in North Carolina in the extension of local health departments, and it is believed that this movement will continue until all the people of the State enjoy the services of whole-time local health departments. The State Division of County Health Work has been created to promote the extension of such units into the remaining unorganized areas of the State and to simplify the administration of the units now in operation. The trend of the State's administrative policy being followed is to integrate the specialized facilities provided by the technical divisions of the State Department of Health with the generalized facilities of full-time local health departments, the one supplementing the other in the development of well-rounded local health programs. On the one hand, the several local health departments are tied together by the Division of County Health Work, each constituting an integral part of a coordinated service. On the other hand, the directors of the technical divisions of the State Department of Health work through the Director of the Division of County Health Work in integrating special phases of public health as parts of the generalized programs of local health units. Hence, the Director of County Health Work provides an administrative channel through which the interrelated functions of the Divisions of the State Department of Health and of the several local health departments are discharged to the mutual advantage of the State and the locality. Because the Division of County Health Work coordinates administratively State and local complements of the whole health organization, its logical position in the plan of organization would appear to be that of a division of local administration in the Office of Administration.

With reference to the personnel of this Division, these recommendation suggest the employment of two assistant divisional directors. One of these would be stationed in, and have charge of, the coastal region of the State and the other, the western section of the State. The Director would have immediate charge of the central section of the State and would supervise the other two assistant directors on his staff. Furthermore, with respect to the technical employees on the staff of this Division who render intradivisional specialized services, it is suggested in addition that consideration be given to transferring these employees to the staffs of the divisions of the State Department of Health which are responsible for the development of these specialized services. The view is taken that such specialized services should be provided on the basis of an interdepartmental as distinguished from an intradivisional plan of organization. It follows, without the need of undue emphasis, that administrative changes of this character need not be looked upon as urgent for the immediate future but rather that such personnel transfers be made when circumstances arise which make the transition opportune.

The Tri-County Health Department, consisting of Orange,

Person, and Chatham Counties, fulfills now some of the functions of the demonstration district suggested in these recommendations, and this district could be developed further to advantage, it is believed, in the fulfillment of all of the objectives ennumerated. It may be pointed out that, with headquarters at Chapel Hill, this full-time district health department is immediately accessible to the University of North Carolina, with which it is affiliated, and is also conveniently near Duke University, and Raleigh where the departments of State government concerned are located. To fulfill an immediate need, the demonstration district would be utilized as an experimental area in which a program for local health service within the State would be perfected. Under the leadership of the Director of the Division of County Health Work the directors of the technical divisions of the State Department of Health would work with the director of the demonstration area in the development of their special services as integral parts of the local health program, and to this end there would be assigned technical employees of the several State divisions concerned to supplement the basic staff of the district health unit. After the program in the experimental area has been formulated and put into successful operation, provision would be made for the in-training of the staffs of local health districts operating throughout the State and for the temporary assignment of members of the supplemental staff of the demonstration district to local health departments. By in-training in the experimental area and by supplementing local health staffs with technical assistants from the demonstration district, it is believed that marked progress would be made in strengthening many, or all, of the services rendered by local health districts throughout the State—that is, the demonstration district would play the role of a pacesetter in elevating standards of these local health departments. Concurrently, or as circumstances may make opportune, the other roles projected for the demonstration district, enumerated in these recommendations, would also be developed.

10. RECOMMENDATIONS PERTAINING TO STATISTICAL SERVICES

a. That the scope of the services of the Division of Vital Statistics be extended gradually to include the technical supervision of the collection and analysis of public health statistical data in general, and thereby function eventually as a division of statistical methods.

b. That the director of this Division cooperate, through official channels, with (1) the other directors of divisions and agencies of the State Health Department (See Epidemiology) for guidance in the set-up of statistical procedures and for rendering technical services in the analysis and interpretation of data collected, and with (2) the directors of local whole-time departments of health, through the technical supervision of the statistical secretary of the division of local administration, for:

(a) rendering guidance in the further development of methods covering the registration, collection and analysis of mortality and morbidity statistics; of data pertaining to the health status of the several age groups of the population; and of statistics concerning the sanitary status of domestic water, milk, food establishments, sewage disposal, etc., and, for

(b) rendering technical services in the analysis and interpretation of the data collected—

to the end that this service fulfill the function of evaluating the progress which is being made in the attainment of public health objectives of the whole health organization.

COMMENT

The collection and compilation of statistics are required by each of the divisions of the State Department of Health and also by local health departments within the State. In order to provide an integrated statistical service which meets the needs of the health organization as a whole as well as its component parts, these recommendations suggest that the Division of Vital Statistics be expanded into a division of statistical methods. The principal advantage of such a plan would be to provide responsibility for central leadership in the visualization and realization of a unified statistical service in the person of the Director of the Division of Vital Statistics who has been trained as a specialist in this field of activity. Furthermore, such a plan would be in keeping with the policy of administration recommended for coordinating other divisions of the State Department of Health in rendering basic interdepartmental services.

11. RECOMMENDATIONS PERTAINING TO EPIDEMIOLOGICAL SERVICES

a. That the technical aspects of collection and analysis of morbidity reports be undertaken by the Division of Vital Statistics for the Division of Epidemiology as an interrelated department service.

b. That a section of tuberculosis be established in, and made a part of, the Division of Epidemiology under the direction of a physician who has specialized adequately in the epidemiological aspects of tuberculosis, and preferably has had basic training and experience in public health administration, together with such subordinate personnel as may be necessary for the section to fulfill its functions; and that the director of this section be responsible to the director of the division of epidemiology for the development, through official channels, of an effective cooperative program in the counties of the State which integrates the facilities of State and local sanatorium services, including, the extension Bureau of Tuberculosis of the State Sanatorium, local health departments, and other agencies concerned.

c. That a section of respiratory diseases be established in, and made a part of the Division of Epidemiology, under the direction of a physician who has specialized adequately in the clinical, laboratory, and epidemiological aspects of respiratory diseases (especially pneumonia and influenza) and preferably has had basic training and experience in public health administration, together with such subordinate personnel as may be necessary for the section to fulfill its functions; and that an advisory commission to the director of this section be created—consisting of representatives of the medical profession and scientists of the staffs of medical schools in the State who are specialists in the fields of pneumonia and filterable viruses; and that the director of this section and his advisory committee be responsible to the Division of Epidemiology for the development of an effective cooperative program in the counties of the State which integrates the facilities of the State Laboratory of Hy-

giene, other laboratories (typing stations), health departments, medical societies, and others concerned.

d. That pneumonia be made a reportable disease.

e. That a section of cancer control be established in, and made a part of the Division of Epidemiology, under the direction of a physician who is a cancer specialist, together with such subordinate personnel as may be necessary to fulfill its function; and that an advisory commission to this section be created, consisting of cancer specialists on the staffs of medical schools in the State or on the staffs of institutions or hospitals in which cancer is given special emphasis, and of representatives appointed by the State Medical Society; and that the director of this section, and his advisory committee, be responsible to the director of the Division of Epidemiology for the development, through official channels, of a cancer program for local health departments that would incorporate the facilities of local health departments, medical societies, hospital organizations, and other institutions and agencies concerned.

COMMENT

To bring about more effective organizational integration, these recommendations provide that the morbidity statistics be compiled by the Division of Vital Statistics as an interdepartmental function rather than by the Division of Epidemiology as an intradivisional activity. The statistical clerks of the Division of Epidemiology would be transferred to the staff of the Division of Vital Statistics. The time required of the Director of the Division of Epidemiology in supervising these employees would be conserved for his other responsibilities, and the compilation of these data would be facilitated through the availability of modern equipment in the Division of Vital Statistics.

Tuberculosis is a major public health problem in North Carolina. To provide for central leadership in combating this disease, a section of tuberculosis within the Division of Epidemiology is considered essential in order to effect proper integration of the facilities of the health and sanatoria authorities. The solution of administrative questions pertaining to the administrative relationship which should exist between this section and the extension Bureau of the State Sanatorium might best be deferred, it is believed, until the director of this section has been appointed and has had an opportunity to study thoroughly the problem involved. In this connection, it is to be pointed out that commendable progress is being made by the authorities of the State Sanatorium in the extension of their influence beyond the walls of State sanatoria to the tuberculosis problem in the field. It would appear obvious that the guiding policy for bringing about the cooperation of all parties concerned in the development of the State's tuberculosis program should be such as to further promote this trend. Apart from serving as a coordinator of all interests now operating in the tuberculosis field, the director of the section of tuberculosis would complement these facilities by contributing the services of an epidemiologist trained specifically with reference to tuberculosis.

The establishment of a section of respiratory diseases within the Division of Epidemiology is recommended because the progress of the research on these diseases has now advanced to the stage where it would appear to be opportune for the establish-

ment of public health machinery for the development of more effective programs. In the beginning, this section would be in a position to stress a pneumonia program designed to reduce existing death rates by bringing about better nursing care of these patients and the better utilization of biological products and new specific drugs which have been introduced in recent years and found effective in the treatment of pneumonia. Furthermore, in view of the advanced development of laboratory facilities in North Carolina, this section would be in an opportune position to cooperate with the State Laboratory of Hygiene in carrying out joint epidemiological and laboratory studies pertaining to influenza. With the building up of the facilities of the State Department of Health for efficient work in influenza, it may be possible for the director of the section of respiratory diseases to mature a control program so as to be in a position to ward off devastating effects when a pandemic of the disease again returns to sweep the state.

The establishment of a section of cancer control is advocated because the view is taken that health administrators should not be inactive when confronted with a health problem of such magnitude. To start with, the program of such a section might include the following activities: (a) The carrying out of educational measures designed to secure the cooperation of the public with practicing physicians in an effort to uncover cancer before metastasis occurs; (b) the operation of field diagnostic clinics following a plan similar to that in vogue for the early detection of tuberculosis patients; (c) the fuller development and utilization of facilities within the state for the diagnosis and treatment of cancer, such as that of radium, X-ray, etc.; and (d) through the agency of local health departments, efforts could be made to develop programs that would concentrate attention on special phases of the cancer problem, such as, for example, control of cancer of the breast. Cancer should also be made a reportable disease. These measures are suggested to indicate in what directions the program of the section of cancer control might be matured. If full use should be made of the control measures now at the disposal of health administrators, it is possible that many lives would be saved and that improvements in or perfection of the cancer control program would be realized much more quickly.

12. Recommendations Pertaining to Public Health Laboratory Services

a. That private laboratories in the State which undertake the examination of specimens or samples for public health purposes be licensed, subject to inspection and approval, by the State Board of Health, and that suitable legislation to this end be enacted.

b. That the Director of the State Laboratory of Hygiene make such investigations as may be necessary to familiarize himself with the status of local laboratory work, how well local needs are being met, and in what way local laboratory service may be improved, to the end that local and central laboratory services may be better integrated in the development of a unified laboratory service for the State as a whole.

c. That adequate laboratory facilities be established for work with filterable viruses of public health interest, attention being directed in the beginning to influenza.

d. That budgetary provisions be made to enable the State Laboratory of Hygiene to expand its facilities for initiating research or cooperating with other divisions in scientific investigations—particularly, studies of the fundamental nature of diseases of public health importance occurring in North Carolina—for the purpose of obtaining knowledge which will lead to the development of more effective and more practical methods of control.

COMMENT

The construction and equipment of the new laboratory building, as well as the development of the Biological Farm recently acquired will continue to occupy fully the attention of the Director of the State Laboratory of Hygiene for the immediate future. When these major projects have been completed or advanced sufficiently, attention can then be given to the realization of the plans projected in these recommendations. The principal aims embodied in them are as follows: (1) To establish adequate local public health laboratory services; and (2) to develop public health laboratory research further.

From the initiation of the public health laboratory service in North Carolina down to the present, attention has been almost exclusively devoted to the development of the central laboratory facilities of the State Department of Health. In the near future progress in the realization of the objectives of the State Laboratory of Hygiene will have been advanced sufficiently to permit the State laboratory director to turn his attention to the solution of the local laboratory problem. These local laboratories should be established at strategic communication centers and the technical staff employed should be well qualified and carefully selected. Whether or not these laboratories should be organized as field branches of the State Laboratory of Hygiene or as subdivisions of local health departments would not appear to be a matter of great administrative moment, providing, of course, that these local laboratories are functionally integrated with the State Laboratory of Hygiene. Such functional interrelationship is of primary importance in order that the facilities of the State laboratory may complement those of the local laboratories to mutual advantage in rendering a well-rounded laboratory service. The establishment of regional laboratories is essential because the local needs for public health laboratory services are far from being fully realized and the burden of routine work placed upon the State Laboratory of Hygiene has now reached such proportions as to demand relief.

It may be well to point out also that local private laboratories performing public health services should be licensed in order that the reliability of their work may be assured. Furthermore, the State Laboratory of Hygiene should strengthen its relationship with other government laboratories and with university laboratories situated within the State to the end that their auxiliary facilities, insofar as applicable, may be mobilized to the fullest extent possible in meeting the public health needs of North Carolina.

Attention thus far has primarily been given to the development of those phases of the laboratory program which deal with routine technical tests and with the manufacture and distribution of biological products. These phases of the program should,

of course, continue to receive major emphasis, but at the same time the role of the government laboratory as a research institution should also receive due consideration. The laboratory director occupies a strategic position within the health organization to exercise leadership in the promotion of joint laboratory and field investigations, the objectives of which are the acquisition of knowledge needed to open doors now closed to the health administrator. Furthermore, though the leadership of the Director of the State Laboratory of Hygiene, undertakings in the research field might be shared to mutual advantage with university laboratories. Attention in these recommendations is specifically directed toward virus dieases of public health interest.

13. Recommendations Pertaining to Sanitary Engineering Service

a. That the present trend toward the integration of the sanitary services of the Division of Sanitary Engineering with those of whole-time health departments be further developed as rapidly as the local employment of trained sanitary officers permits, to the end that inspectional services of the State be transferred to local sanitary officers.

b. That the State Department of Health in cooperation with the State Department of Agriculture review existing legislation pertaining to the supervision of dairy and other food products for the purpose of formulating amendments or new legislation that would empower the State Board of Health to supervise the strictly public health aspects of such industries, thereby obviating any unnecessary duplication of authority and inspection service.

c. That the State Department of Health in cooperation with the North Carolina Fisheries Commission review existing legislation pertaining to the shellfish industry for the purpose of formulating amendments or new legislation that would empower the State Board of Health to supervise the strictly public health aspects of this industry.

d. That enabling acts be provided authorizing the State Board of Health to pass rules and regulations covering the sanitary control of swimming pools, and of recreational resorts and tourist camps.

e. That State laws delegating authority to the State Board of Health with reference to the sanitation of public institutions be amended, or new legislation enacted, to provide for approval by the State Board of Health for the construction of new school buildings, or the remodeling of old, in so far as said plans pertain to sanitation.

f. That a survey of the State be made to determine the status of stream pollution by trade wastes and sewage, and that, if the need exists, legislative authority be sought for coping with the problems presented.

Comment

These recommendations embrace two main considerations, namely, (1) a question of administrative policy governing the interrelationships of the Division of Sanitary Engineering and whole-time local health departments, and (2) provisions for strengthening and extending the activities of the Division of Sanitary Engineering.

A large part of North Carolina now enjoys the services of whole-time local health departments, and for the most part the staffs of these units include trained sanitary officers. Because of these circumstances the time would seem to be opportune for the further integration of whole-time local and state sanitary services. Operating through the administrative channels of the Division of County Health Work, the Division of Sanitary Engineering is in a favorable position to exercise leadership and share responsibility in the formulation and execution of local sanitary programs to the end that the State and local facilities may complement each other.

The Division of Sanitary Engineering is in an awkward position at present to develop sanitary programs pertaining to swimming pools, the dairy industry, and the shellfish industry because legal responsibilities are either obscure or delegated indirectly to the health authorities through some other government agency. To correct this condition, it is recommended that legislative enactments be obtained so as to define clearly the responsibilities of the State Board of Health and to provide bases upon which control programs may be developed. It is further recommended that the facilities of the Division of Sanitary Engineering be made available to educational authorities for the purpose of establishing proper sanitary and hygienic facilities at the time new school buildings are erected or old buildings remodeled. To this end, it is suggested that the Division of Sanitary Engineering be required to aprove architectural plans for new or remodeled school buildings prior to the time that structural work is undertaken. Precedent for such service on the part of the State Board of Health has been established with reference to the approval of plans for public water supplies and sewage disposal systems.

An additional recommendation pertains to the problem of stream pollution and provides for a survey to determine the status of existing conditions as a basis upon which future control programs may be formulated. Little has been done in this field of sanitation in North Carolina, but it is probable that a survey will indicate a real need and that this need will become more acute as the State becomes more industrialized.

14. RECOMMENDATIONS PERTAINING TO PREVENTIVE MEDICINE SERVICES

a. That the Director of the Division of Preventive Medicine through official channels, be

1) Responsible for exercising leadership among directors of local health departments in the formulation, execution, and appraisal of programs in the further development, or establishment, of the following services:
   a) Maternal hygiene, including midwifery supervision.
   b) Infant and preschool care.
   c) Health supervision of dependent children and children gainfully employed.
   d) Health supervision of adult groups.
   e) The care of crippled children—and, to facilitate these developments, that there be employed specialists in obstetrics, pediatrics, etc., to supplement the staffs of local health units in raising local professional standards in the field of maternal, infant, and pre-school care; and,
2) Responsible, coordinately with directors of other State

agencies concerned, for exercising leadership among directors of local health departments in the formulation, execution, and appraisal of programs in the further development (or establishment) of the following services:

a) School health.
b) Nutrition.
c) Mental hygiene.
d) Eugenics,

in so far as these services may pertain to preventive medicine, and the facilities of the division can assist in furthering the objectives sought.

b. That the excessive responsibilities with which the Director of this Division is now burdened be lessened by the transfer of duties pertaining to general health education, and the technical supervision of the Division's nursing services to other sections or agencies of the State Health Department (see Recommendations Nos. 7 and 8).

COMMENT

According to the provisions of these recommendations, the services of the Division of Preventive Medicine are grouped under two main headings, namely, (1) those for which the Director is immediately responsible and (2) those for which the Director shares coordinate responsibility. The administration of the services listed in the first subdivision is viewed as a responsibility which lies essentially within the health organization, whereas the administration of the services listed in the second subdivision is looked upon as being shared by the State Board of Health with other government agencies.

In recognition of common responsibilities which can best be shared by more than one government agency, for example, the health and educational authorities have established a coordinating agency as a means of integrating the facilities of each organization in the establishment and maintenance of a school health service. The State Health Department is given representation in the coordinating agency through the affiliation with it of the Director of the Division of Preventive Medicine, and by virtue of this tie-in shares a major responsibility in the development of the school health service. Similarly, in the fields of nutrition, mental hygiene, and eugenics, other state agencies, in addition to the State Health Department, have responsibilities in common in the development of these services, and it is anticipated that coordinating agencies will be established for them also to implement the teamwork needed. The responsibility of the Director of the Division of Preventive Medicine should not be looked upon, however, as being completely delegated to these coordinating agencies, but he, as well as the executive officers of other government services concerned, should clearly appreciate that the agency is to be utilized by each of the participants in putting into effect an integrated service, thereby eliminating the necessity of setting up independent programs—i.e. the coordinating agency serves as a common arm for all participants.

With reference to health supervision of adult groups, we would suggest that this service be developed in close cooperation with public hospital administrators and officials of local medical societies. The facilities of hospitals are needed in order to carry out periodic health examinations of adults with the degree of

completeness desirable and to provide advantageously for the correction of defects or abnormalities which may be disclosed. In North Carolina there exist excellent laws covering the construction and maintenance of public hospitals, and owing to the interest and assistance of the Duke Foundation considerable progress has been made in the establishment of hospital services. Furthermore, the interest of the local medical profession should be solicited to the end that the periodic health examination may serve as a means for further developing the preventive medical practice of physicians. Because deviations from the normal in presumably healthy people may be difficult to disclose, it is believed that group practice is indicated. Such groups would consist of a general practitioner with whom would be associated specialists in the various fields of medicine. The general practitioner would be in direct charge of the patient, but in supervising the health of the patient he would have the guidance and assistance of these specialists. It is suggested further that the plan be matured first in one health jurisdiction before any effort is made to introduce the service on a state-wide basis. In this way, imperfections in the administrative procedures can be eliminated without the complication of multiplicity of effort or the crippling influence of mistakes which might be of considerable moment if they were made on a state-wide basis. The economic problem involved would require the careful consideration of the administrative officers of health departments, hospitals, and the medical societies. Should it be possible, however, to mature periodic health examinations so as to merit the confidence of the public, it is anticipated that in time this service will develop into the periodic examinations of family groups. In this event, the public health provisions for the examination of school children, as well as infant welfare conferences, etc., may be incorporated into a well-rounded professional service in the field of preventive medicine.

With reference to a eugenics program, it may be well to point out that considerable progress has been made in the development of birth control projects through the auspices of the official health organization. Attention should be given, we believe, to broadening the birth control program into a project which is basically concerned with the objectives of the eugenicist. Since the state laws regarding the sterilization of the unfit have been quite well developed for North Carolina, it would also appear to be advisable for the health authorities to explore the feasibility of joining forces with the Eugenics Board in order to determine in what manner, if any, each can complement the other in developing further a program of common concern. The eugenics problem has many complexities, so, the guidance of a specialist should be secured who has ample scientific training to fit him to assume the responsibility.

15. Recommendations Pertaining to Oral Hygiene Services

a. That the districts of the State to which dentists on the staff of the Division of Oral Hygiene are assigned, consist of one county or more and that these dentists, while working in counties which support whole-time health departments, function as specialists supplementing the staffs of these local units to the end that oral hygiene services of the Division be integrated, through

official channels, as an integral part of the program of whole-time local health departments.

b. That the Director of Oral Hygiene serve as adviser to the coordinator of school health work with reference to matters pertaining to oral hygiene, and cooperate with the director of the section of Public Health Education in the coordination of the educational program of this division as an integral part of the general educational program of the health department.

COMMENT

The recommendation set forth here advocates the horizontal plan of administration for the Division of Oral Hygiene rather than the vertical plan now in effect. This change, however, should be brought about gradually during an adequate transitional period. At first the dental field staff would continue as a part of the personnel of the Division of Oral Hygiene, but the Director of this Division would make it clear to them that they are to identify themselves closely with the local health staff when operating in areas served by whole-time health units. At the close of the transitional period these field dentists should become bona fide employees of local health departments and would therefore be directly responsible administratively to the local health officer. Operating through official channels, the Director of the Division of Oral Hygiene, however, would continue to exercise technical supervision over these field dentists. Financial provision for local dentists would be provided preferably in accordance with the plan now in effect for financing local health departments in general,—i.e. the state would supplement local funds, providing that (1) qualification standards for the employment of dentists are adhered to, and (2) technical supervision by the Director of the Division of Oral Hygiene is accepted.

When the section of public health education, as proposed heretofore, has been organized, the oral hygiene educational services should become a part of the services of this section. The Director of Oral Hygiene would cooperate with the director of the section of public health education in the formulation of the educational program for oral hygiene, but the responsibility for integrating it as a component part of the whole educational program would be placed upon the director of the section of public health education. In carrying out the oral hygiene phase of the educational program, the educational director would depend upon the services of the local staff of dentists, teachers in the public schools, public health nurses, etc. The purpose of the recommendation is to relate the part to the whole and to make available to the Director of the Division of Oral Hygiene the services of a public health education specialist. When the time becomes opportune, the employees of the Division of Oral Hygiene who are specifically engaged in promoting public health educational measures would be transferred to the staff of the section of public health education.

The field of public health dentistry in North Carolina is limited to the public schools of the State. Because of this circumstance, it is essential that the coordinating agency for rendering school health services utilize the facilities of the Division of Oral Hygiene. The School Health Coordinator and the Director of this Division would therefore be called upon to work in very close cooperation.

16. That group research be made a basic function of the State and local health departments and that a steering commit-

tee consisting of the directors of the various specialized services of the State Department of Health be organized to formulate and promote the execution of coordinated programs through the integrated facilities of this large health organization with its ramifications throughout the state.

COMMENT

The view is entertained here that the government health organization should function as a research institution in addition to serving as an operating agency. The problem of the health administrator is to interrelate these major subdivisions of the public health program so that the one complements the other to the mutual benefit of both. Because research may lead to further control of disease and to advances in the promotion of health, the administrator of the government health organization should feel obligated, it is believed, to take full advantage of the unique opportunities presented for productive investigational work.

The steering committee's function is to coordinate the services of the whole health organization to the end that group judgment and leadership may be exercised in formulating research programs, and that the facilities of the whole organization may be integrated, so far as may be feasible, in carrying out these projects. Through the leadership of this steering committee the facilities of universities and other agencies should also be encouraged to participate. In this way, the organized facilities of services within and without the official health organization can be utilized cooperatively in advancing basic research projects in North Carolina.

17. RECOMMENDATIONS PERTAINING TO INDUSTRIAL HYGIENE SERVICES

a. That the industrial hygiene service be classified as one of the cooperative agencies of the State Health Department.

b. That the facilities of this agency be integrated, insofar as practicable, with those of local health departments to the end that the specialized services which are carried out by it in whole-time health jurisdictions be reported to the local health officers in order that they may be kept fully informed of the status of industrial hygiene in their health jurisdictions and may be in a position, through their sanitary staffs, to supplement these specialized services by cooperating and rendering follow-up services or in any other way mutually agreed upon.

COMMENT

Since the objectives of the Division of Industrial Hygiene are a joint responsibility of the State Board of Health and the State Industrial Commission, it would appear logical for this service to be organized as a cooperating agency rather than as a technical service of the State Board of Health as at present. If such a change in the organizational relationship of this service were made, it is suggested that consideration be given to the setting up of a Committee on Industrial Hygiene to assist the executive officers of both the State Board of Health and the State Industrial Commission in the Division's administration. The purpose of such a coordinating committee is to simplify the interdepartmental relationships without in any way divorcing this service from the State Board of Health.

The second objective of these recommendations is to effect

the integration of the facilities of the Division of Industrial Hygiene with those of whole-time local health departments to the extent that such cooperation may be mutually beneficial.

18. That a public health operating manual embodying the principles, policies, and procedures of the entire health organization be prepared for the guidance and orientation of the staffs of the state and local health departments in the fulfillment of their several interrelated functions.

COMMENT

An operating manual is an instrument which gives a clear exposition of the several services of the State Health Department and of the services of local health organizations. It provides a pattern of administrative procedures for the guidance of the staff of the central and local health organization to the end that the personnel of the whole health organization may function as a team in carrying out a unified program. Because public health administrative problems are complex and the routine demands upon the time of health officers interfere with constructive thinking and planning disorientation is apt to result, and trivial matters may be permitted to consume the valuable time of public health personnel. Furthermore, health officials who operate on the basis of a topical program are apt to experience difficulty in its realization, and because of the obstacles presented they may become content to do routine matters which arise every day rather than to exercise administrative ingenuity in working objectively toward the attainment of definite public health goals. Owing to these circumstances, the recommendation set forth here is considered of major importance.

The preparation of an operating manual should be the responsibility of a joint committee consisting of state and local representatives. Its membership might well be the directors of the various divisions of the State Health Department and outstanding local health officers, public health nurses, sanitarians, and clerks. The scope of the operating manual should cover the organization and services of the various divisions of the State Health Department and also of whole-time local health departments. Thus, through the utilization of group judgment in the establishment of standards of practice, the promise of integration of personnel and assets of central and local health departments in the execution of a unified health program would appear to be most effectively provided for.

Part I of this report is, in a limited sense, an abridged operating manual. Much of the material presented should be of value to the proposed committee in the accomplishment of its objectives.

APPENDIX

APPENDIX

TABLE NO. 1

EXPENDITURES OF THE STATE BOARD OF HEALTH

1937-1938

Division	Total Expenditures	Sources of Funds		
		State General Fund	Federal Funds*	Special Funds
Administration	$ 22,215.56	$ 13,317.10	$ 8,898.46	$ 11,258.12*
County Health Work	379,639.06	95,513.04	281,126.02	8,826.59†
Epidemiology	49,064.33	32,223.82	5,582.39	42,476.04‡
Sanitary Engineering	71,743.45	58,378.39	4,538.47	
Oral Hygiene	144,391.22	70,494.34	31,420.80	
Preventive Medicine	121,411.11	31,747.02	89,664.09	
Laboratory of Hygiene	123,256.66	117,678.65	5,578.01	
Vital Statistics	28,813.14	24,166.92	4,646.22	
Printing	11,080.03	11,080.03		
Industrial Hygiene	17,450.90		17,450.90	
Crippled Children	105,212.64		105,212.64	
Malaria Control	10,093.92		10,093.92	
Total	$1,084,372.02	$ 457,599.31	$ 564,211.96	$ 62,560.75

*—Reynolds Foundation Fund
†—Bedding Fund.
‡—Special Dental Fund.

FEDERAL FUNDS

U. S. Public Health Service Funds		$ 337,914.39
Children's Bureau:		
M. C. H.	$ 121,084.93	
Crippled Children	105,212.64	
		226,297.57
		$ 564,211.96

TABLE NO. 2

COUNTIES OF NORTH CAROLINA

AREA, POPULATION, (1930 CENSUS), AND ASSESSED VALUATION

Counties	Land Area in Square Miles	Total Population	Total Assessed Valuation 1937
NORTH CAROLINA	48,740	3,170,276	2,348,030,143
Alamance	492	42,140	35,611,200
Alexander	289	12,922	7,675,746
Aleghany	234	7,186	4,083,125
Anson	556	29,349	14,441,545
Ashe	427	21,019	3,858,812
Avery	238	11,803	4,377,990
Beaufort	840	35,026	21,681,701
Bertie	703	25,844	9,744,808
Bladen	976	22,389	11,019,971
Brunswick	790	15,818	7,008,435
Buncombe	682	97,937	89,762,336
Burke	534	29,410	25,041,399
Cabarrus	390	44,331	45,150,284
Caldwell	471	28,016	21,816,092
Camden	220	5,461	3,153,112
Carteret	573	16,900	10,225,427
Caswell	402	18,214	7,981,646
Catawba	408	43,991	43,863,049
Chatham	696	24,177	15,591,969
Cherokee	454	16,151	7,415,254
Chowan	165	11,282	7,085,807
Clay	220	5,434	1,597,777
Cleveland	496	51,914	29,458,030
Columbus	933	37,720	19,083,301
Craven	660	30,665	13,404,862
Cumberland	670	45,219	23,423,769
Currituck	292	6,710	4,307,986
Dare	377	5,202	2,681,568
Davidson	569	47,865	32,821,890
Davie	258	14,386	10,860,030
Duplin	790	35,103	15,839,617
Durham	312	67,196	111,861,381
Edgecombe	509	47,894	24,493,976
Forsyth	388	111,681	161,158,015
Franklin	468	29,456	12,033,357
Gaston	363	78,093	82,394,457
Gates	359	10,551	5,530,445
Graham	298	5,841	6,560,030
Granville	503	28,723	16,976,757
Greene	252	18,656	6,731,857
Guilford	691	133,010	171,328,569
Halifax	676	53,246	30,814,405
Harnett	588	37,911	21,805,507
Haywood	546	28,273	24,210,933
Henderson	358	23,404	21,521,597
Hertford	341	17,542	9,891,942
Hoke	417	14,244	7,312,601
Hyde	617	8,550	3,846,853
Iredell	588	46,693	34,419,281
Jackson	494	17,519	8,018,776

TABLE NO. 2—*Continued*

COUNTIES OF NORTH CAROLINA

AREA, POPULATION, (1930 CENSUS), AND ASSESSED VALUATION

Counties	Land Area in Square Miles	Total Population	Total Assessed Valuation 1937
Johnston	807	57,621	30,824,897
Jones	417	10,428	3,974,154
Lee	261	16,996	11,786,809
Lenoir	390	35,716	21,366,620
Lincoln	299	22,872	13,049,782
McDowell	400	20,336	5,550,521
Macon	513	13,672	7,479,468
Madison	436	20,306	11,929,236
Martin	438	23,400	17,241,221
Mecklenburg	597	127,971	141,495,825
Mitchell	213	13,962	6,783,870
Montgomery	498	16,218	13,407,694
Moore	639	28,215	20,433,209
Nash	586	52,782	26,689,092
New Hanover	216	43,010	53,159,681
Northampton	504	27,161	10,720,225
Onslow	743	15,289	7,635,305
Orange	390	21,171	14,882,394
Pamlico	350	9,299	3,753,515
Pasquotank	223	19,143	14,106,448
Pender	815	15,686	8,688,757
Perquimans	252	10,668	5,871,512
Person	391	22,039	10,422,503
Pitt	627	54,466	34,210 492
Polk	251	10,216	5,255,371
Randolph	803	36,259	21,850,253
Richmond	521	34,016	22,262,561
Robeson	990	66,512	31,806,846
Rockingham	579	51,083	41,899,742
Rowan	489	56,665	61,980,507
Rutherford	544	40,452	23,364,157
Sampson	886	40,082	18,256,398
Scoltand	349	20,174	11,505,041
Stanly	416	30,216	23,968,943
Stokes	480	22,290	9,443,674
Surry	520	39,749	26,270,335
Swain	553	11,568	5,949,986
Transylvania	379	9,589	4,905,159
Tyrrell	390	5,164	2,687,172
Union	565	40,979	15,646,974
Vance	279	27,294	18,181,891
Wake	824	94,757	85,029,353
Warren	425	23,364	9,497,169
Washington	327	11,603	6,186,300
Watauga	303	15,165	7,628,097
Wayne	571	53,013	32,783,869
Wilkes	735	36,162	15,352,522
Wilson	373	44,914	26,979,650
Yadkin	312	18,010	8,260,573
Yancey	298	14,486	4,635,143

TABLE NO. 3
GENERAL FUND RECEIPTS
1937-1938

Inheritance Tax	$	2,106,688
Licenses		2,553,946
Franchise		7,909,923
Income Tax		11,296,381
Sales Tax		11,134,333
Beverage Tax		1,529,797
Gift Tax		45,614
Intangibles		470,409
Miscellaneous		9,094
Total Tax Revenue	$	37,056,185
Non-Tax Revenue		1,553,210
Total Revenue	$	38,609,395
Credit Balance July 1, 1937		5,231,300
Total Funds Available	$	43,840,695

TABLE NO. 4
GENERAL FUND EXPENDITURES
1937-1938

Legislative		12,260
Judicial		444,194
Executive and Administrative:		
Department of Revenue	548,840	
Board of Health	353,954	
Others	1,582,013	2,484,807
Educational Institutions:		
University of North Carolina	1,392,494	
Others	870,541	2,263,035
Charitable and Correctional Institutions		2,152,262
State Aid and Obligations		1,993,618
Pensions		549,813
Contingency and Emergency		(197,047)
Less Reimbursement from Prior Years		3,500
Total Other Than Public Schools and Debt Service		9,896,489
Public Schools		23,950,343
Total Other Than Debt Service		33,846,832
Debt Service		4,044,719
Total Expenditures Out of General Fund		37,891,551

TABLE NO. 5
HIGHWAY FUND RECEIPTS
1937-1938

Motor Vehicle Revenue:		
Registration	$ 7,344,283	
Gasoline Tax	22,747,032	
Title Registration	155,124	$ 30,246,439
Less Undistributed Revenue	$ 2,792	30,243,647
Other Revenue		28,391
Federal Aid		4,887,554
Total Revenue		$ 35,159,592

HIGHWAY FUND EXPENDITURES
1937-1938

General	$ 27,266,510
Debt Service	9,351,991
	$ 36,618,501

TABLE NO. 6
AGRICULTURE FUND RECEIPTS
1937-1938

Fertilizer Tax	$ 223,543
Other Taxes	229,743
Total Revenue	$ 453,286
Previous Balances	318,865
Total Funds Available	$ 772,151

EXPENDITURES
1937-1938

Department of Agriculture	$ 428,949
State College of Engineering and Agriculture:	
Experiment Station	26,350
Seed Improvement	4,550
Total Expenditures	$ 459,849
Unexpended Balances	312,302
	$ 772,151

TABLE NO. 7

STATE CHARITABLE, CORRECTIONAL, AND PENAL INSTITUTIONS, AND COUNTY INSTITUTIONS IN NORTH CAROLINA

STATE INSTITUTIONS	Locality	Population on June 30, 1938
Caswell Training School	Kinston	699
State Hospital, Goldsboro	Goldsboro	2,104
State Hospital, Morganton	Morganton	2,299
State Hospital, Raleigh	Raleigh	2,245
Orthopedic Hospital	Gastonia	158
N. C. Sanatorium	Sanatorium	535
Western Sanatorium	Black Mountain	126
Confederate Soldiers' Home	Raleigh	1
Confederate Women's Home	Fayetteville	42
Eastern Carolina Training School	Rocky Mount	114
Stonewall Jackson Manual Training and Industrial School	Concord	486
Morrison Training School for Negro Boys	Hoffman	140
State Home and Industrial Home for Girls	Eagle Springs	161
North Carolina School for Negro Girls	Efland	10
Farm Colony for Women	Kinston	44
State Highway and Public Works Commission—Prison Department	Raleigh	9,250
COUNTY INSTITUTIONS:		
17 County Tuberculosis Sanatoria		550
100 County Jails		1,600
82 County Homes in 1938		2,788
30 County Prisons and Workhouses		380
Juvenile Detention Quarters		73
TOTAL		23,805

TABLE NO. 8

INSTITUTIONS OF HIGHER LEARNING IN NORTH CAROLINA

STANDARD FOUR-YEAR COLLEGES (WHITE)

NAME	LOCATION
Appalachian State Teachers College	Boone
Asheville Normal and Associated Schools	Asheville
Atlantic Christian College	Wilson
Catawba College	Salisbury
Chowan College	Murfreesboro
Davidson College	Davidson
Duke University	Durham
Elon College	Elon
East Carolina Teachers College	Greenville
Flora McDonald College	Red Springs
Greensboro College	Greensboro
Guilford College	Guilford College
High Point College	High Point
Lenoir Rhyne College	Hickory
Meredith College	Raleigh
Queens-Chicora College	Charlotte
Salem College	Winston-Salem
University of North Carolina	Chapel Hill
State College of Agriculture & Engineering of the University of North Carolina	Raleigh
Woman's College of the University of North Carolina	Greensboro
Wake Forest College	Wake Forest
Western Carolina Teachers College	Cullowhee

TABLE NO. 9

INSTITUTIONS OF HIGHER LEARNING IN NORTH CAROLINA

STANDARD FOUR-YEAR COLLEGES (COLORED)

NAME	LOCATION
Agricultural and Technical College	Greensboro
Bennett College for Women	Greensboro
North Carolina College for Negroes	Durham
Johnson C. Smith University	Charlotte
Livingstone College	Salisbury
Shaw University	Raleigh
St. Augustine's College	Raleigh
Winston-Salem Teachers College	Winston-Salem

TABLE NO. 10
COUNTY TUBERCULOSIS SANATORIA IN NORTH CAROLINA

COUNTY	Location	Beds		
		White	Colored	Total
Buncombe	Asheville	24	0	24
Columbus	Whiteville	6	6	12
Cumberland	Fayetteville	17	17	34
Durham (Infirmary)	Durham	12	12	24
Edgecombe	Tarboro	16	16	32
Forsyth	Winston-Salem	96	72	168
Guilford	Jamestown	90	48	138
Halifax	Halifax	14	14	28
Vance (Scott Parker Sanatorium)	Henderson	14	0	14
Johnson	Smithfield	9	9	18
Mecklenburg	Huntersville	136	30	166
Nash	Nashville	10	24	34
Wake	Raleigh	12	12	24
Wilkes	Wilkesboro	16	9	25
New Hanover	Wilmington	18	18	36
Martin	Williamston	4	4	8
Wilson	Wilson	20	20	40
		514	311	825

TABLE NO. 11

RACIAL DISTRIBUTION OF POPULATION IN NORTH CAROLINA

	1930	Percentage			Males per 100 Females		
		1930	1920	1910	1930	1920	1910
Total Population	3,170,276	100.0	100.0	100.0	98.8	99.9	99.2
White	2,234,948	70.5	69.7	68.0	100.5	101.6	101.2
Negro	918,647	29.0	29.8	31.6	94.6	96.0	94.8
Other Races	16,681	0.5	0.5	0.4	102.4	103.3	103.9
Mexican	10						
Indian	16,570	0.5	0.5	0.4	100.5	102.1	102.0
Chinese	68						
Japanese	17						
Filipino	6						
Hindu	0						
Korean	1						
Native White	2,226,160	70.2	69.4	67.7	100.4	101.4	101.0
Native Parentage	2,208,563	69.7	69.0	67.3	100.4	101.4	101.0
Foreign or Mixed Parentage	17,597	0.6	0.4	0.4	97.6	99.9	98.5
Foreign Parentage	7,919	0.2	0.2	0.2	100.1	104.5	100.4
Mixed Parentage	9,678	0.3	0.2	0.2	95.6	95.6	97.0
Foreign Born White	8,788	0.3	0.3	0.3	137.6	157.4	170.5
Naturalized	5,463	0.2	0.1		149.5	137.7	